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## CONTENTS AND SUBJECT INDEX

So-Called Circulation of the Cerebrospinal Fluid: Chairman's Address. G. B. Hassin, M.D., Chicago...821

Removal of the Right Cerebral Hemisphere for Infiltrating Glioma: Report of a Case. W. James Gardner, M.D., Cleveland.....823

Discussed by Dr. Craig.

Intrapleural and Extrapleural Pneumolysis in Treatment of Pulmonary Tuberculosis. Le Roy S. Peters, M.D., and P. G. Cornish, M.D., Albuquerque, N. M.....826

Discussed by Dr. Myers.

Liver Sequestration After Cholecystectomy: Report of Case, with Review of Experimental and Clinical Observations. Herman Shann, M.D., and William Z. Fradkin, M.D., Brooklyn.....829

Congenital Air Cyst of the Lung: Report of Case. C. V. Croswell, M.D., and J. Cash King, M.D., Memphis, Tenn.....832

Gastric Examination in Pulmonary Tuberculosis with Negative Sputum: Diagnostic Importance. David Ulmar, M.D., and George G. Ornstein, M.D., New York..835

Studies of the Visual Fields in Functional Headaches of Pituitary Origin. Beulah Cushman, M.D., Chicago .....837

Discussed by Dr. Walker.

Acute Uncinariasis from Massive Infestation and Its Implications. Bailey K. Ashford, M.D.; George C. Payne, M.D., and Florence King Payne, M.D., San Juan, P. R...843

Congenital Median Bars Occurring in Twins. Otto J. Wilhelmi, M.D., St. Louis .....847

Standards and Licensure in Ophthalmology. William H. Crisp, M.D., Denver .....849

Discussed by Dr. Holloway.

CLINICAL NOTES, SUGGESTIONS AND NEW INSTRUMENTS

Water Hemlock Poisoning. Myrl M. Miller, M.D., Akron, Ohio.....852

COUNCIL ON PHYSICAL THERAPY 853

COMMITTEE ON FOODS 854

EDITORIALS

The N. I. R. A. Drug Trade Code and the Doctor.....856

Diurnal Changes in the Body Temperature .....857

The Acid Factor in Peptic Ulcer.857

CURRENT COMMENT

Stop the Dust.....859

(Subject Index on next page)

ASSOCIATION NEWS 859

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## SUBJECT INDEX TO THIS ISSUE

The letters used to explain in which department the matter indexed appears are as follows: The Star (*) indicates an Original Article; "ab," abstract; "E," Editorial; "C," Correspondence; "Ml," Medicolegal; "ME," Medical Economics.


A. M. A., unauthorized salesmen....862
Abortion, induced, dangers....ab-896
danger of intra-uterine foreign bodies..ab-894
Acetylene welding, hazards....874
Acid, hydrochloric with glutamic, modifies gastric secretion....ab-894
Actinomycosis, diagnosis and autovaccine therapy....ab-895
Adenoma sebaceum, identity....ab-894
Air, filtered, chambers in pulmonary tuberculosis....ab-883
Alcohol, increase quota of medicinal liquor.862
American Chemical Society, meeting....862
Amino-Acid to prevent arsphenamines intolerance....ab-892
Amnion, hydramnios....ab-891
Amytal, sodium, for water hemlock poisoning....*852
Anacidity, histamine test in....ab 893
Anemia, idiopathic hypochromic....ab-887
nutritional, value of pigeon peas....ab-883
pernicious, antagonistic to tuberculosis..C-872
Anencephalus, prenatal roentgen diagnosis....ab-896
Anesthesia, blood cholesterol in....ab-885
spinal, tropacocaine hydrochloride in...ab-884
Angina, agranulocytic, ocular complications in....ab-881
Arsphenamines intolerance, amino-acid to prevent....ab-892
Arteriosclerosis, cerebral, in diabetic....875
Artery, femoral, erosion....ab-885
Arthritis of spine....ab-888
rheumatoid, nodules in....ab-886
**Association News....859**
Athletics, medical supervision in schools, France....866
Automobile horns, loud, prohibited, Paris...863

Bacterial filtrates, local skin reactivity to....ab-886
Bladder, cancer, cystectomy for....ab-882
diverticula not interfering with urination.868
Blindness, hereditary nature....867
Blood cholesterol in anesthesia....ab-885
groups and morphologic characters....868
pressure, action of epinephrine....ab-894
transfusion, growth, France....865
**Book Notices....877**
**Books Received....Adv. page 28**
Brain injuries, ocular signs in....ab-887
removing right hemisphere for infiltrating glioma....*823
tumors, mental symptoms....ab-890
**Bureau of Investigation....870**
Burns, extensive cutaneous....ab-884
unhealed, treatment....ab-883

Car sickness....874
Carbon Monoxide poisoning, effects of methylene blue on....C-873
Cerebrospinal Fluid, circulation....*821
Chickenpox, elementary bodies....ab-891
Chiropractor forbidden to use "doctor" in title....863
Cholesterosis of gallbladder in Indians..ab-889
Choline formation, intestinal wall site of..ab-894
Choroid, sarcoma, treated with radium....864
Cicuta, water hemlock poisoning....*852
Coitus, pelvic pain during....876
**Committee on Foods....854**
Congress, medical, in Algeria....865
of Legal Medicine....868
Conjunctiva, leptotrichosis....ab-884
**Correspondence....872**
**Council on Medical Education....876**
**Council on Physical Therapy....853**
Cretinism, marriage in....873

Dacryocystitis in new-born....868
**Deaths....869**
Dermatitis repens, Besredka's antivirus intradermally in....ab-886
Diabetes Mellitus, cerebral arteriosclerosis in....875
Digitalis administration....ab-885
Diphtheria carriers, Corynebacterium diphtheriae isolated from....ab-885
Drug salesman, detail, prohibited, Italy....868
trade code, N. I. R. A., and the doctor..E-856
value, opinions on, and fees, Germany...868
Dust, stop it....E-859

Embden, Gustav, death....868
Embolism, arterial, treatment....ab-895
Emphysema, mediastinal....ab-894
Encephalitis, Epidemic, in St. Louis....860
Endocrine, fetal, function during pregnancy.873
Epidemics, news of....862
Epinephrine, circulatory action....ab-894
Eyes, complications in agranulocytic angina....ab-881
Committee on Compensation Tables for Eye Injuries....C-872
signs in brain injuries....ab-887
swindlers active....859
tumors, radium treatment....864

Fallopian Tubes, decidual reaction in tubal pregnancy....ab-895
Fees and opinions on value of drugs, Germany....868
Fetus, endocrine function during pregnancy..873
malformations, roentgen diagnosis....ab-896
Fibromatosis, subungual, identity....ab-894
Finger Prints, photographing....865
**Foreign Letters....864**
Gallbladder, cholesterosis in Hindus....ab-889
excision, liver sequestration after....*829
Genitals, tuberculosis, medical treatment..ab-893
Glioma, infiltrating, remove right cerebral hemisphere for....*823
retinae destroyed by radium....864
**Government Services....863**

Hair, detecting source of, animal or man...875
Hay Fever, amino-acids in....ab-892
Head bending symptom....ab-894
Headache, functional, of pituitary origin...*837
Health, demonstration, six years old....861
public, course in, North Carolina....861
public, England....864
Heart, innervation....ab-884
cinematographic radiography....865
Histamine test in diagnosis of anacidities..ab-893
Hormones, research on....867
Hospitals, postmortem examinations in....C-873
psychiatric, new plan for....862
Insurance, health, national system, breakdown, England....864
problems of medicine with relation to....868
Intestines, ileus, adynamic....ab-882
obstruction, high....ab-893
wall, as site of choline formation....ab-894

Jamaica Ginger, peddlers of, convicted....862
Jenkins, P. B., reappointed....861
Jews, England and the German persecution of....864

Larynx tuberculosis....868
Leptotrichosis conjunctivae....ab-884
Library building for Los Angeles County Society....859
Licensure in ophthalmology....*849
Lips, chapping and peeling of....876
Liver, cirrhosis, rose bengal test....ab-890
sequestration after cholecystectomy....*829
Lungs, congenital air cyst....*832
cinematographic radiography....865
Lupus erythematosus....874

Malpractice: indemnity insurance; questioning defendant concerning, permissible....Ml-880
Marriage in cretinism....873
between relatives, Germany....867
**Marriages....868**
Maternal mortality, undeclining, England..864
Mediastinum, mediastinal emphysema....ab-894
Medical College of Virginia, changes....862
**Medicolegal....880**
Medicosurgical Society of Catania....868
**Meetings, Coming Meetings....880**
Menstruation, aphthous stomatitis at period..875
Mental Disease with cerebral tumors...ab-890
Midwives in Delaware....859
Milk injections, in pelvis disease....ab-888
pasteurized, use required, N. H....860

N R A, drug trade code and the doctor...E-856
Navy, U. S., officers, promoted....863
Necropsies, percentage in hospitals....C-873
Neurofibromatosis, identity....ab-894
Neurosyphilis, typhoid vaccine in....ab-888
**News....859**
Noise, less in the subway....861
Nursing school at University of Colorado closed....859

Ophthalmology, standards and licensure in..*849

Pain....ab-891
Paralysis, facial, Bell's....874
Peas, pigeon, value in nutritional anemia..ab-883
Pelvis disease, milk injections in....ab-888
pain during coitus....876
Peptic Ulcer, immunization treatment...ab-887
acid factor in....E-857
mucin in....ab-888
Physicians hobbies, exhibit of....863
N. I. R. A. drug trade code and....E-856
private and examinations of school children....861
Pituitary Body tumors, atypical syndromes....ab-895
visual fields in functional headaches of..*837
Pneumonoconiosis, stop the dust....E-859
Poisons, found improperly labeled....863
Poliomyelitis, acute anterior, less common forms....ab-892
Poliomyelitis in Bergen County, N. J....860
Posture, diurnal changes in body temperature....E-857
Pregnancy, thyroid in....873
tests, gravidic urine and intra-ocular ovarian transplants....868
tubal, decidual reaction of tube in....ab-895
twin, in double uterus....ab-895
Prostate, congenital median bars in twins..*847
Psychoanalysis, lectures on, New York....861
Puerperal Infection, vaccination of uterine parenchyma....ab-892

**Queries and Minor Notes....873**

Race, sexual sterilization to improve, Germany....866
**Radio Program....859**
Rectum, cancer, excision....ab-881
cancer, inoperable precolostomy for....ab-882
prolapse, method of treating irreducible..ab-882
Retina, glioma, destroyed by radium....864
Rheumatic Fever, nodules in....ab-886
Roentgen Rays, burns, symptoms....876
Roentgenology, new courses in, New York Postgraduate....861

St. Louis University faculty changes....860
Scarlet Fever antitoxin, use....876
Schools, medical supervision of sports in, France....866
Sclerosis, disseminated, surgical treatment....ab-892
Sex hormones in plants (thelykimin)....867
Skin disease in vitamin A deficiency....ab-889
reaction to bacterial filtrates....ab-886
Sleep, diurnal changes in body temperature....E-857
Smallpox, complement fixation in....ab-890
**Society Proceedings....880**
Spinal Cord, impairment of posterior roots....ab-894
Spine, arthritis....ab-888
primary echinococcosis....ab-893
**State Board Examinations....876**
State Board, new appointments, Louisiana..860
Sterilization, sexual, to improve the race, Germany....866
Stomach, contents, tubercle bacilli in....*835
acid factor in peptic ulcer....E-857
secretion, modified by hydrochloric acid plus glutamic acid....ab-894
Sugar tolerance, surgical attempts at....ab-884
Surgical Clinic in Berlin....863
Syphilophobia....875
Syphilis, negative Wassermann tests in....875
treatment....875

Taylor, C. B., dinner to....860
Temperature, body, diurnal changes in....E-857
Thyroid in pregnancy....873
**Tonics and Sedatives....Adv. page 22**
Tubercle Bacillus in stomach contents....*835
Tuberculin tests, comparison....ab-883
tests, intradermal, in nontuberculous..ab-889
tests, reinvestigation after....ab-889
Tuberculosis, deaths, reduced, N. H....860
director of work appointed, Michigan....860
in Northern Africa....865
pernicious anemia antagonistic to....C-872
Tuberculosis, Pulmonary, filtered air chambers in....ab-883
gastric examination in....*835
intrapleural and extrapleural pneumolysis for....*826
Twin pregnancy in double uterus....ab-895
congenital median bars occurring in....*847
Typhoid vaccine in neurosyphilis....ab-888

Uncinariasis, acute, from massive infestation....*843
Undulant Fever, metaphen for....ab-888
Urinary Tract, malformations....ab-896
Urology, gift for advancement of....860
Uterus cancer, cervical, cellular structure vs. radium treatment....ab-890
double, twin pregnancy in....ab-895
foreign bodies, danger....ab-894
vaccination in puerperal infection....ab-892
Uveal Tract, sarcoma, destroyed by radium.864

Valerian, curb sale of....861
Vertigo, aural....ab-891
field, in functional headaches of pituitary origin....*837
problem of Snellen symbol....C-872
Vital Statistics, death rate low, Miss....860
Vitamin A deficiency, dermatosis in....ab-889
$B_2$, research on....867

Wassermann tests, negative, in syphilis....875
Western Reserve University fellowships awarded....861
Workmen's Compensation Acts: medical fees; liability of employer beyond statutory limits....Ml-880
typhoid fever not compensable....Ml-880

Yellow Fever immune serums, preservation....ab-882


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## SO-CALLED CIRCULATION OF THE CEREBROSPINAL FLUID

CHAIRMAN'S ADDRESS


GEORGE B. HASSIN, M.D.

Professor of Neurology, University of Illinois College of Medicine; Attending Neurologist, Cook County Hospital

CHICAGO


The problem of circulation of the cerebrospinal fluid is closely associated with other important but as yet unsettled problems pertaining to this fluid. Of these, the origin and the modes of its absorption will be considered in brief.

According to the dominant teaching, the cerebrospinal fluid originates largely, if not exclusively, from the choroid plexuses of the two lateral third and fourth cerebral ventricles, from which it escapes mainly through the recesses of Luschka to the basal cisterns of the brain. From the cisterns, the fluid is supposed to run upward to the subarachnoid space of the cerebral convexity, where it is assumed to become absorbed by the villi of the arachnoid membrane and discharged into the venous sinuses of the dura. The cerebrospinal fluid is supposed to travel not only upward or cephalad but also caudad to the subarachnoid space and the central canal of the spinal cord. With such a conception of the origin of the cerebrospinal fluid it is quite admissible to speak of a circulation,[1] for how otherwise could the fluid reach the vertex of the brain or invade the subarachnoid space of the spinal cord? The escape of the fluid from the cerebrospinal subarachnoid spaces has from the days of Key and Retzius [2] been thought to take place in the brain, through the arachnoid villi or the pacchionian bodies.[3] In the spinal cord, the absorption is supposed to occur through the blood vessels, a mode of discharge also described for the cerebral portion of the cerebrospinal fluid.[4]

It is evident that the main phenomena in connection with the origin and absorption of the cerebrospinal fluid—its progress against the law of gravity from the base to the top of the brain, its simultaneous flow caudad to the spinal spaces and the dissimilar modes of its absorption in the brain and the spinal cord—are not altogether clear and are even illogical. The only feature that seems to be established is that there is a fluid in the ventricles of the brain, the subarachnoid spaces and the central canal. However, the tissues of the brain and cord also possess a fluid in which they are bathed together with the blood vessels and the myriads of capillaries. Through osmosis or other physicochemical factors the tissue fluids, saturated with waste products of activity of the brain and cord, are transported to the adventitial spaces of the walls of the blood vessels and capillaries. These spaces are in direct communication (fig. 1) with the cerebrospinal subarachnoid spaces, the cerebral ventricles and the spinal central canal, forming a system of channels. The latter extend outside the brain and cord over the perineurial spaces of the cranial and peripheral nerves and the spinal roots (fig. 2). That is to say, the spaces of the peripheral nerves (endoneurial, perineurial and epineurial) are continuous with the cerebrospinal subarachnoid spaces and the cerebral ventricles, with which they form a whole. It is possible to inject a substance into a peripheral nerve and convey the substance to the cerebral subarachnoid spaces, including the cisterns and the ventricles,[5] and, vice versa, it is possible to transmit to the peripheral nerves a substance that has been injected into the subarachnoid spaces of the brain and cord.[2] In the presence of such a system of canals in the brain and cord, one is justified to postulate that their tissue fluids, having invaded the adventitial and the subarachnoid spaces, the ventricles and the cisterns, extend into other parts, such as the perineurial spaces of the cranial and spinal nerves, by which they are discharged to the general vascular system. With such a fact in view, one must consider that the contents of the subarachnoid space are derived not from the choroid plexus but from the tissue fluids of the cerebrospinal parenchyma. They are transmitted from one part of the system of canals to another by a slow process of diffusion, probably assisted by the contracting and expanding movements of the cord and the brain.

One may thus speak of a circulation of the cerebrospinal fluid, but not as an active, physiologic process such as is presented by the circulation of the blood discharged in definite directions by a central force into a system of elastic tubes. Nothing of the kind takes place in the tissue fluids, which seem to be in a state of equilibrium and an interference with which tends to produce either abnormal currents, such as occur in spinal punctures, for instance, or phenomena of stasis. The phenomena of stasis are of particular importance. They are manifest wherever an obstruction of the system of pathways for the fluid exists. If the obstruction is in the cerebral ventricles (a tumor, for instance) or at the base of the brain (meningitis), stasis of the


From the Neuropathology Laboratory, University of Illinois College of Medicine.


Owing to lack of space, this article is abbreviated by the omission of two illustrations. The complete article appears in the author's reprints.


Read before the Section on Nervous and Mental Diseases at the Eighty-Fourth Annual Session of the American Medical Association, Milwaukee, June 15, 1933.


1. Cushing, Harvey: The Third Circulation, in Studies of Intracranial Physiology and Surgery, the Cameron Prize Lectures, New York, Oxford University Press, 1925.

2. Key, S., and Retzius, A.: Anatomie des Nervensystems und des Bindegewebes, Stockholm, P. A. Norstedt & Söner, 1876, vol. 2.

3. Weed, L. H.: The Absorption of Cerebrospinal Fluid into the Venous System, Am. J. Anat. **31**: 191 (Jan.) 1923.

4. Dandy, W. E., and Blackfan, K. D.: An Experimental and Clinical Study of Internal Hydrocephalus, J. A. M. A. **61**: 2216 (Dec. 20) 1913; Internal Hydrocephalus: An Experimental, Clinical and Pathological Study, Am. J. Dis. Child. **8**: 406 (Dec.) 1914.

5. Funaoka, Sligo: Untersuchungen über das periphere Nervensystem: Die Injektion des Nervensystems, Kyoto, Japan, Anatomical Institute of Kyoto Imperial University, 1930, ser. A, no. 1.

tissue fluids takes place in the form of internal and external hydrocephalus. More striking are the phenomena of stasis in the spinal cord. Figure 3 shows stasis in the tissues of the spinal cord, as evidenced by their rarefaction. The cause of the rarefaction is a large mass of connective tissue in the epidural space, which harbors several abscesses. The mass obliterated the perineurial root spaces and thus rendered impossible the

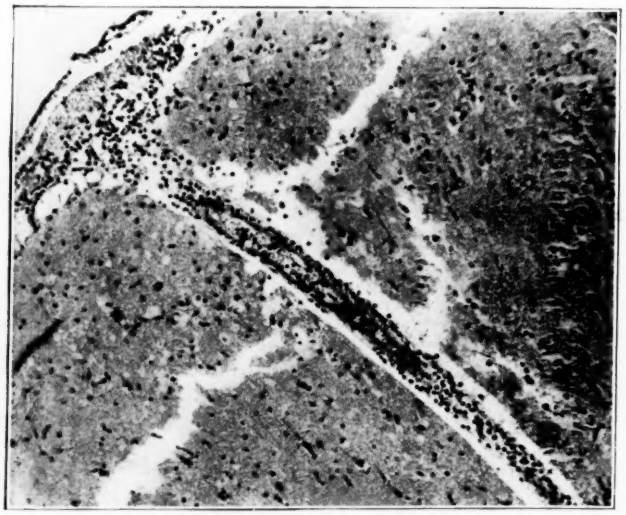

Fig. 1.—A blood vessel with its perivascular spaces filled with polymorphonuclear cells extends from the deep area of the brain to the subarachnoid space (from Cone and Barrera: The Brain and the Cerebrospinal Fluid in Acute Aseptic Cerebral Embolism, Arch. Neurol. & Psychiat. **25**: 523 [March] 1931).

outflow of the fluid contents of the subarachnoid spaces, which, as has been said, are continuous with the perineurial spaces of the spinal roots. In turn, the stasis in the subarachnoid space prevents the discharge of the tissue fluids of the spinal cord, causing their stasis and rarefaction. At the levels of the spinal cord where there is no obstruction, as in the cervical, upper dorsal and

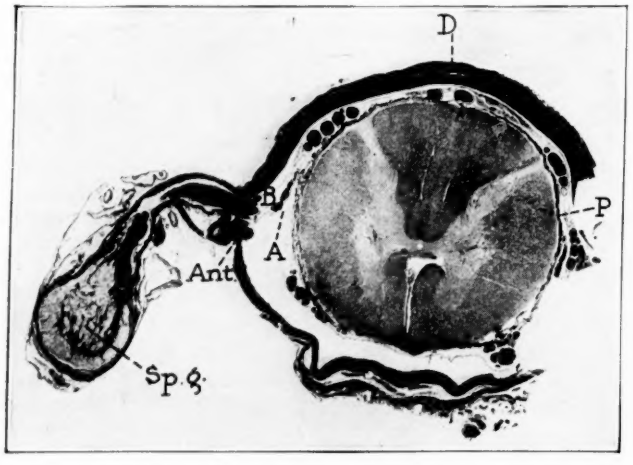


Fig. 2.—Extension of the subarachnoid space (marked *B* and enclosing in the upper part of the picture the posterior roots) into the spinal ganglion (*sp.g.*). *D* is the dura, underneath which is a free space, the subdural space. *P* is the pia mater, above which are the posterior roots. At *A* is the arachnoid; *Ant.* indicates the anterior root; at *B* is the posterior root within the subarachnoid space. Van Gieson stain; reduced from a magnification of × 7.

lumbosacral segments, the outflow of the fluids is free and areas of stagnation are absent, as is well shown in figure 4. The obstruction does not have to be voluminous. A small nodule (fig. 5) suffices to cause the phenomena of stasis, and severe clinical symptoms result. Spastic paraplegia and other phenomena of pressure on the spinal cord developed within a short time in the patient from whom the tissue for this slide was taken. Though the pressure was relieved by operation, the patient died from genito-urinary complications. The epidural lesion was a lymphogranuloma. The phenomena of stasis occur with any epidural lesion, whether benign or malignant. Stasis may be caused by a carcinoma (fig. 6) or a melanoblastoma (fig. 7), by adhesions in the spinal membranes or by a mere inflammatory nodule. Other facts support the view that the contents of the subarachnoid space, or of the tissue spaces of the cord, which are the same, are discharged at individual levels. The facts also confirm the opinion that there must be such a phenomenon as circulation of the cerebrospinal fluid, but it is only in a transverse direction and not caudad or cephalad.

That the fluid does not circulate caudad or cephalad was well shown by the experimental work of Sachs and his co-workers.[6] They injected very small amounts of a coloring substance into the subarachnoid space of

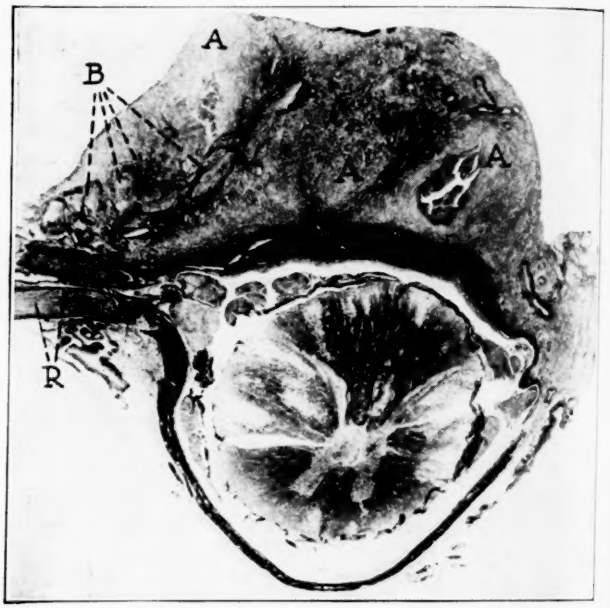


Fig. 3.—Rarefaction in the posterolateral columns, and a slight rarefaction in the anterior columns. The mass above the posterior thickened dura is the epidural space filled with proliferated connective tissue enclosing three abscesses (*A, A, A*); at *B* are smaller encapsulated abscesses; at *R*, the roots with the perineurial spaces obstructed. Toluidine blue stain; reduced from a magnification of × 5.

dogs and watched the level of the dye as it extended. The extension of the droplet of dye was a slow process. When, for instance, it was injected at the level of the third lumbar vertebra, only at the end of ten hours was it located higher up, at the level of the first cervical vertebra, and in none of the experiments "had the dye diffused throughout the entire cerebrospinal space." Sachs and his co-workers reached the conclusion that a true circulation of the spinal fluid does not exist, and that the extension of the dye was, in their experiments, by slight diffusion assisted by gravity. Yet pathologic observations show that if the cerebrospinal fluid possessed no movements or some sort of circulation, the tissue fluids of the brain and cord would become stagnant and lead to their destruction by causing rarefaction, unless one assumes that the physical process of diffusion alone may suffice to prevent it. Neuropath-

6. Sachs, Ernest; Wilkins, H., and Sams, C. F.: Studies on Cerebrospinal Circulation by a New Method, Tr. Am. Neurol. A., 1929, p. 253.

ologic studies thus bring to light important facts in relation to the cerebrospinal fluid that cannot be understood on the basis of histologic, physiologic, pharmacologic and other evidence. Studies of inflammatory,

Fig. 5.—Small epidural nodule (lymphogranulomas), especially to the right of the cord and a marked rarefaction of the lateral column on the same side.

degenerative and even neoplastic states force one to conclude that the cerebrospinal fluid is not produced by the choroid plexus but represents the tissue fluids of the brain and spinal cord, and that it is not absorbed by

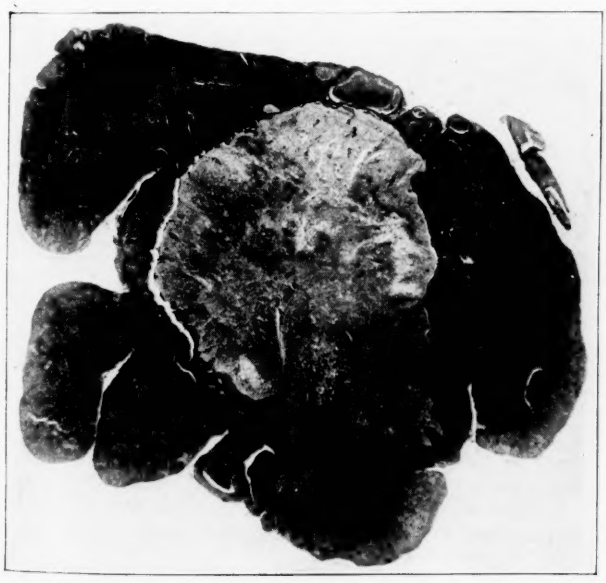

Fig. 7.—Melanoblastoma of the cauda equina, enveloping the spinal cord, which shows areas of rarefaction.

the arachnoid villi or pacchionian bodies, but, carrying the waste products of nerve activity, is eliminated by the perineurial spaces of the cranial and spinal nerves through a passive process of slow circulation.

# REMOVAL OF THE RIGHT CEREBRAL HEMISPHERE FOR INFILTRATING GLIOMA

## REPORT OF A CASE

W. JAMES GARDNER, M.D.
CLEVELAND

The removal of the right cerebral hemisphere is a procedure that seldom is indicated. From the surgical standpoint, its use is restricted to those cases of infiltrating glioma involving the midportion of the hemisphere in which it would appear that this procedure and none other could be effectual in removing the entire growth. From the humanitarian standpoint, it should be offered only to those patients desirous of living under the resultant adverse circumstances, which should also be carefully explained to the relatives.

Dandy,[1] in 1928, indicated the feasibility of this procedure and reported five cases. Of this series, the first patient lived three and one-half years but died of recurrence of the growth; the second patient died within three months from recurrence; the third died of hemorrhage forty-eight hours after the operation; the fourth died two weeks after the operation from pneumonia, while the fifth was living two months after the operation at the time of the report.

Of three cases in which I have removed the right cerebral hemisphere, the last two patients died within thirty-six hours of hyperthermia, and the first is alive and well twenty-one months after operation. From these results, it appears that this operation entails a very grave risk but, if the tumor is completely removed, an indefinite continuance of life is possible. As the speech areas of the brain are in the opposite hemisphere in right-handed persons, no demonstrable speech or intellectual impairment follows the operation. The preservation of function may be quite remarkable, as is shown by the patient whose case report follows:

A married woman, aged 31, was referred to the clinic by Dr. John D. O'Brien, Aug. 29, 1931. She complained of convulsions, weakness of the left side of the body, headaches and failing vision. The following history was elicited: Generalized convulsions had begun ten years before and had occurred from two to four times yearly. The attacks were preceded by an aura of intense burning in the palm of the left hand. During each of three pregnancies occurring six years, three years and ten months prior to admission, the attacks had increased in frequency but had changed to convulsions of a jacksonian type, involving the left side of the body. Eight months previously a therapeutic abortion had been performed on account of frequent convulsions and a beginning left hemiparesis. For two months blurring of vision had been present, and headache, vomiting and marked emotional instability had occurred during the last two weeks before admission.

On examination, the patient exhibited clonic convulsions affecting the left side of the face and neck and occasionally the left arm. These attacks occurred every few minutes. She cried or laughed on very slight provocation. A bilateral papilledema was present and studies of the visual fields revealed a complete left homonymous hemianopia. There was moderate left hemiparesis, affecting the lower part of the face, arm and leg. The tendon reflexes on this side were increased, and the Babinski response was positive. A bilateral ankle clonus was present. Tactile perception was greatly impaired over the entire left side

From the Cleveland Clinic.
Read before the Section on Surgery, General and Abdominal, at the Eighty-Fourth Annual Session of the American Medical Association, Milwaukee, June 15, 1933.

1. Dandy, W. E.: Removal of the Right Cerebral Hemisphere for Certain Tumors with Hemiplegia, J. A. M. A. **90**: 823-829 (March 17) 1928.

of the body and face, while pain, thermal, position and vibratory perception appeared to be entirely lost. The spinal fluid pressure was 300 mm. of water. Roentgenograms of the skull disclosed an atrophy of the posterior clinoids and dorsum sellae. The clinical diagnosis was tumor in the right temporoparietal region.

Operation was performed, Aug. 31, 1931. With the patient in the sitting position, a large horseshoe-shaped flap of scalp with the attached pericranium and temporal muscle was refracted from the right frontoparietal region. A section of

Fig. 1.—Operative exposure, showing tumor.

bone 4½ inches in diameter was removed with a Souttar craniotome and the bony opening was enlarged into the temporal region with a rongeur. When the dura was opened, a cauliflower-like cortical tumor was exposed in the temporoparietal region. The tumor was exceedingly fragile, dark and very vascular. On palpation it appeared to extend widely beneath the cortex, and the subcortical portion contained some small cysts.

After consultation with the relatives it was decided to proceed with an excision of the hemisphere. The emerging cerebral veins to the sagittal sinus and those from the inferior surface of the occipital lobe were ligated, cut and coagulated with the electrosurgical unit. The hemisphere was retracted laterally and an incision was made through the cingulate gyrus and corpus callosum into the body of the lateral ventricle. This incision was then carried about the posterior genu and forward about

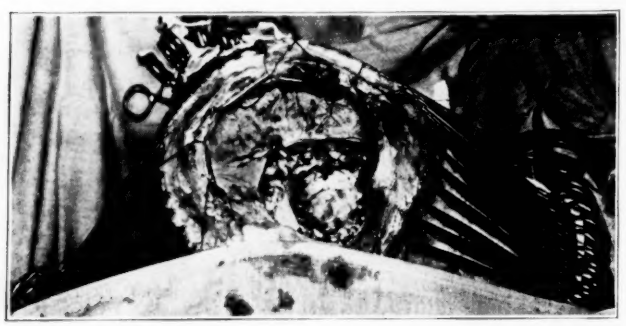

Fig. 2.—Appearance of operative field after removal of hemisphere.

the anterior genu of the corpus callosum. The branches of the anterior and posterior cerebral arteries were secured with silver clips as they were severed. An incision was made in the floor of the body of the ventricle through the internal capsule and outer portion of the corpus striatum into the descending horn of the ventricle. The hippocampal gyrus was then incised from behind forward, a considerable portion of this gyrus and a portion of the mesial wall of the descending horn and choroid plexus being left. The middle cerebral artery was then located, clamped about 1 cm. from its point of origin, and severed. The hemisphere was removed (figs. 1 and 2).

Additional brain tissue in the region of the corpus striatum, which appeared to be infiltrated by the tumor, was trimmed away with the electrosurgical unit. The dura was closed, the cavity filled with saline solution, the section of bone replaced and the scalp closed. During the operation, the patient was given 750 cc. of blood from a suitable donor and 800 cc. of a 10 per cent solution of dextrose intravenously. The sitting position of the patient was thought to facilitate the removal of the hemisphere. The bony opening, however, was rather small for adequate exposure.

Examination of the removed tissue disclosed a superficial portion of the tumor weighing 65 Gm. The excised portion of the hemisphere weighed 520 Gm. (fig. 3). The tumor was found to have invaded the hemisphere deeply and appeared

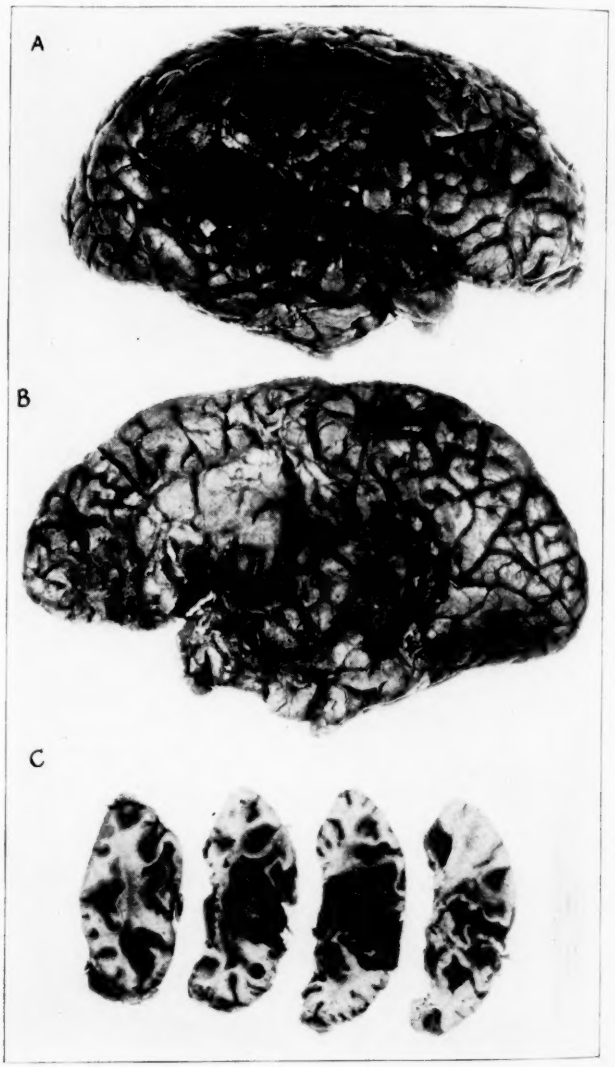


Fig. 3.—*A*, lateral aspect of gross surgical specimen after the cortical portion of the tumor had been removed; *B*, mesial aspect of specimen; *C*, sections of gross specimen to show the depth of tumor infiltration.

mesially at the plane of resection. Microscopically, the tumor proved to be an oligodendroglioma of a moderate degree of malignancy. Mitoses were frequently seen in the tumor cells. In a previous report of this case,[2] the tumor was described as a spongioblastoma. This diagnosis was controverted by more detailed study (figs. 4 and 5).

The patient withstood the operation very well. A few hours after operation she recognized and talked with friends. Forty-eight hours after operation, cerebrospinal fluid leaked through the incision. The wound was dressed and fluid aspirated from the operative cavity by a needle introduced through the scalp. This procedure was repeated from two to four times daily for

2. O'Brien, J. D.: Removal of the Right Cerebral Hemisphere, Ohio State M. J. **28**: 645-649 (Sept.) 1932.

four weeks. The patient's convalescence was very gratifying, although there was a daily rise in temperature to 100 F. until the time of her discharge fifty-one days later. Bladder and rectal incontinence was present for two weeks after operation. The blood pressure, pulse and respirations were not greatly altered by the procedure. At no time during convalescence was there any evidence of mental impairment. No emotional instability was observed following the operation. The patient was optimistic; her attitude bordered on euphoria. She spent part of her time reading and writing. There were no convulsions or headaches and the patient was very grateful for the relief. At no time did she ask about the recovery of the left arm and leg. About five weeks after the operation, the patient began to take a few steps with the support of two nurses. A week later she was able to walk the length of the ward with support. There was definite flexion and extension of the left thigh and leg in walking and she was able to bear her entire weight on it. There was no voluntary movement in the leg when the patient was lying in bed. Sensory tests showed a very marked impairment of tactile, pain and thermal perception on the entire left side. This impairment was less marked in the face than elsewhere. There was complete astereognosis and loss of sense of position in the left arm and leg. These limbs were beginning to show some spasticity.

The patient was last examined, May 17, 1933, twenty months after the operation. She was surprisingly free of complaints. There had been no headache or convulsions. She felt that she was making satisfactory progress and was quite content with her lot. Relatives and friends could discern no alteration in her personality or intellectual abilities.

A neurologic examination disclosed the following: The sense of smell was impaired in the right nostril. The visual acuity was 6/6 in the right eye and 6/6—2 in the left. The optic disks were well defined and rather pale. There was a complete left homonymous hemianopia. The pupils were equal and reacted normally to light and in accommodation. The ocular rotations were full. The left palpebral fissure was 1 mm. wider than on the right side. It appeared that the left masseter and temporal muscles did not contract as forcibly as the right, but her jaw did not deviate on opening. The face was symmetrical in repose except for the slight widening of the left palpebral fissure. The innervation of the occipitofrontalis was symmetrical. There was a very slight weakness on the left side on closing the eyes forcibly and a questionable weakness of the lower part of the face when she smiled and showed her teeth. An audiogram revealed normal hearing in each ear. The pharynx and soft palate appeared to be equally innervated. The tongue protruded in the midline without tremor.

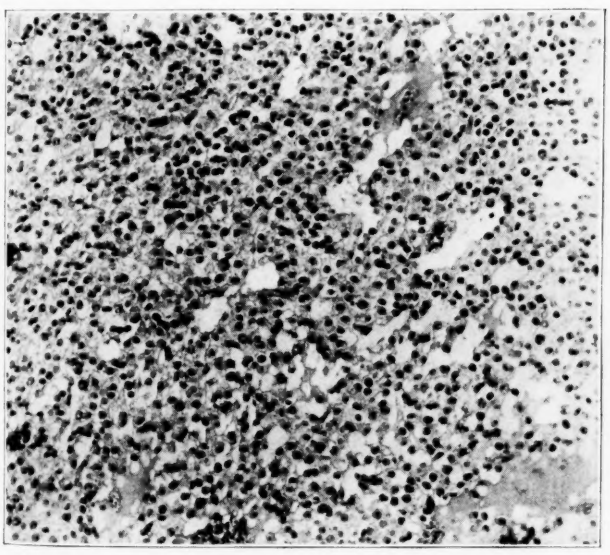

Fig. 4.—Section of tumor; oligodendroglioma; reduced from a photomicrograph with a magnification of 150 diameters.

The patient walked quite well without support. She was able to go up and down stairs without aid. She stated that she frequently went shopping and that her endurance was good. About her home she was able to assist with the cleaning. She washed dishes and clothes in spite of the fact that the left arm was useless. There was considerable power of flexion and extension of the left knee and hip, although these movements were hampered by spasticity which varied from time to time. There was no voluntary movement in the ankle or toes. In walking, there were some associated mass movements in the upper extremity but no voluntary power.

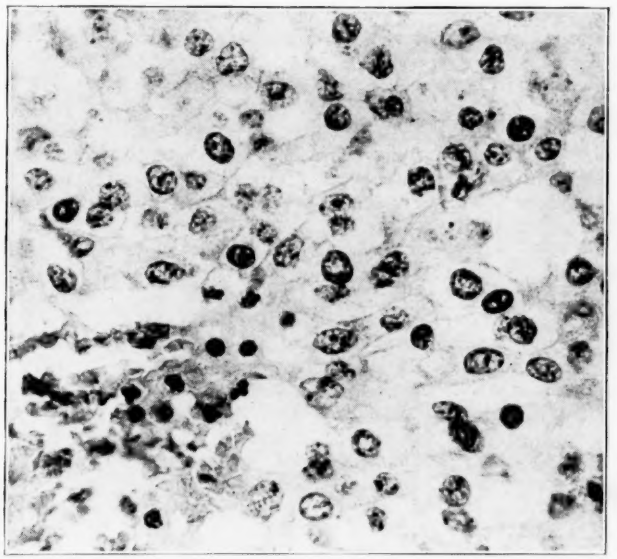

Fig. 5.—Same section as in figure 4 under higher magnification (reduced from a photomicrograph with a magnification of 600 diameters).

Sensory tests revealed complete inability to perceive light touch and gentle pin pricks below the level of the neck on the left side. The patient could not distinguish between temperatures of 40 and 140 Fahrenheit. Two point discrimination and sense of position were entirely lost. Firm pressure with a pin was recognized as painful and firm pressure with the hand was felt but not correctly localized. Vibratory perception was entirely lost on the left side.

In the face there was some impairment of perception for light touch, gentle pin prick and temperature, but these stimuli were recognized and were fairly well localized. Two points were recognized as such if they were separated by a distance of 3 cm. or more.

The tendon reflexes were greatly exaggerated on the left side and the Babinski response was positive. The left palatal and pharyngeal reflexes were very slightly impaired, and the left corneal and abdominal reflexes were absent.

The most interesting feature of this case is the degree of function that is present in the left leg.[3] The earliest motion to appear after operation was the automatic movement of walking. This indicates that the function present in this leg is due to basal ganglion innervation and is not due to impulses from the homolateral hemisphere traversing the direct pyramidal tract.

2050 East Ninety-Third Street.

## ABSTRACT OF DISCUSSION

DR. WINCHELL MCK. CRAIG, Rochester, Minn.: To those of us who are limiting ourselves to neurosurgery, the case which Dr. Gardner has just presented is of extreme interest because it is always difficult to decide between radical and conservative methods when dealing with cerebral tumors of such extensive involvement. This case illustrates what can be done with modern methods in attempting to remove a right-sided tumor of great magnitude. The fact that Dr. Gardner did not

3. Dandy reports that in his patient, who lived three and one-half years after operation, slight flexion and extension of the knee and thigh subsequently developed, but there was never enough function to be of any service.

produce a more permanent disability would indicate that he carefully avoided injuring the basal ganglions. Recently, I had under my care a child of 7 months who was brought because of gradual enlargement of the head. The usual tests were made and the condition appeared to be that of a communicating hydrocephalus, although the ventriculogram revealed what was thought to be a distinctly enlarged right ventricle. When the right hemisphere was explored to remove the choroid plexuses, a congenital absence of the right hemisphere was found and only the basal ganglions had developed. The lack of clinical evidence of this abnormality tends to explain why excellent results, such as Dr. Gardner has shown, are possible and indicates that he did not disturb the basal ganglions during operation. In discussing the pathology of his case, Dr. Gardner emphasized the point that the tumor was a relatively benign type of growth, a so-called oligodendroglioma. Similar to tumors encountered in general surgery, attempts have been made to differentiate tumors of the brain by correlating the clinical and pathologic data to determine the relative malignancy. Oligodendrogliomas represent one of the more benign types of gliomas. In a report before the American College of Surgeons last fall, regarding five year cures in brain tumors of various types, it was interesting to note that the groups in which five year cures were obtained included the oligodendrogliomas. There is one additional contraindication to removal of cerebral hemispheres, which I should like to emphasize. The function of the frontal lobe has to do with the intelligence, and if the frontal lobe could be amputated without any effect on the personality of the patient, this procedure would be much more enthusiastically recommended. I am inclined to think that caution should be used in advising a resection which includes the frontal lobe, because cases have been observed in which there was marked mental deterioration following removal of the frontal lobe. Consequently, in addition to the points emphasized by Dr. Gardner to discuss with the patient and the patient's relatives regarding postoperative difficulties, I think the possibility of postoperative mental deterioration should be stressed.

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# INTRAPLEURAL AND EXTRAPLEURAL PNEUMOLYSIS IN TREATMENT OF PULMONARY TUBERCULOSIS

LE ROY S. PETERS, M.D.
AND
P. G. CORNISH, M.D.
ALBUQUERQUE, N. M.

After the discovery of the tubercle bacillus in 1882, the medical profession believed that it was only a matter of time when a cure for the disease was inevitable. Awaiting the advent of this blessing, sanatoriums were established, and the open air rest regimen was inaugurated. Associations were formed and an educational program was launched. So great was the enthusiasm that optimists expected that the disease would be eradicated in a ten-year period.

After fifty years of this optimism, we of today can sit calmly back and, viewing the still large tuberculous population, realize that the dream of the early worker has not been realized. The curability of tuberculosis is still in the distant future. True, much has been done to cut down the mortality rate, but not the morbidity. Education of the profession has brought more and more early types of cases under treatment, so that often arrest of the disease grants to the individual a life of economic usefulness.

Many heralded cures have been given the profession, to be used enthusiastically for a time and then thrown into the discard. Rest in sanatoriums or rest at home under proper guidance has been the one procedure that seems to have made a niche for itself and to have outlived any criticism that may have been directed against it. So firmly convinced have they become of the value of rest that it is difficult to convert many general practitioners to the idea that compression therapy is really a recognized method of treatment.

The excuse for presenting to a medical audience a subject that is really surgical is evident. The time has come when the man doing general medicine must be made to realize that, unless he familiarizes himself with the possibilities of the surgical side of tuberculosis treatment, he is not giving the best the profession has to offer in the management of this disease.

Twenty years ago, when the administration of artificial pneumothorax was begun, much adverse criticism was voiced even by tuberculosis workers. One of us in a paper [1] before the National Tuberculosis Association in 1919, predicted that this form of compression was here to stay, and we have lived long enough to have this prediction realized. It has taken years to bring pneumothorax to the point of perfection it has reached today, and the surgery of the present period will no doubt be considered crude in the light of tomorrow's knowledge and experience. But, like pneumothorax, it is now a recognized procedure and must be so looked on by any one who considers himself competent to direct the vicissitudes of the patient.

All forms of compression therapy in the majority of cases are directed to the closure of cavities. True, there are many patients without cavitation who are proper subjects for this method, but space forbids their consideration in a paper limited in scope. Any form of compression, to be effective, must be complete, and the end-results will be in direct ratio to this accomplishment.

In an analysis of 700 cases of artificial pneumothorax we [2] showed that, with complete compression, 53 per cent of the patients are well and 24 per cent are dead; with partial compression, 25 per cent are well and 44 per cent are dead, and with no free space, 16 per cent are well and 60 per cent are dead. A glance at these percentages is glaring proof that compression is successful only as it is complete.

We are assuming that tuberculosis workers are agreed that compression therapy is warranted in certain types of cases. We also assume that they are agreed that compression, to produce results, must be complete—that cavities must be closed. Granting these points, we wish to call attention to the advantages of both intrapleural and extrapleural pneumolysis.

A difference of opinion exists among some chest surgeons as to the advantages or disadvantages of the open or closed operation in intrapleural pneumolysis. In our opinion there should be no reason for disagreement. To attempt to sever adhesions in a pneumothorax by the open method subjects the patient to a major operation with all its attendant risks, while the closed method with the cautery is comparatively simple, and in our hands the complications have been nil. This is true according to reports of many other men doing this type of work. It would seem the better part of wisdom to spare the tuberculous patient as much as possible in the way of radical surgery.

We have been doing intrapleural pneumolysis by the Jacobæus-Unverricht method for the past four years

Read before the Section on Practice of Medicine at the Eighty-Fourth Annual Session of the American Medical Association, Milwaukee, June 16, 1933.

1. Peters, L. S.: Artificial Pneumothorax in Pulmonary Tuberculosis, New York M. J. **109**: 535 (March 29), 591 (April 5), 629 (April 12), 678 (April 19), 715 (April 26) 1919.

2. Peters, L. S.: Compression Therapy of Pulmonary Tuberculosis: Comparative Study, Am. Rev. Tuberc. **19**: 74-83 (Jan.) 1929.

and have converted 75 per cent of the partial collapse into complete collapse cases. It is a most valuable adjunct to pneumothorax treatment, and patients whose cavities are not closed after a few months' time should be given the opportunity of this type of operation. Thus, an increased percentage of individuals will be restored to health and countless numbers of normal human beings will be saved from infection through cavity closure, thereby rendering the patient free from tubercle bacilli and eliminating him as a menace to those with whom he comes in contact. Unfortunately, many patients cannot be given a pneumothorax because of a completely adherent pleura, and in many of the partial compression cases cauterization cannot be done, owing to the type of adhesion. These present another problem.

A few years ago a complete thoracoplasty was advised, but now there are two ways that offer less risk to the patient and also a fair percentage of good results. First we shall consider an extrapleural pneumolysis and the introduction of a paraffin pack. This method is effective in upper-stage cavities and, owing to the fact that it is one of the less radical of the major operations, can be used in patients who are not sufficiently good surgical risks for more radical surgery. It has its disadvantages. At times the paraffin breaks

Fig. 1.—Artificial pneumothorax; cavity held open by adhesions.

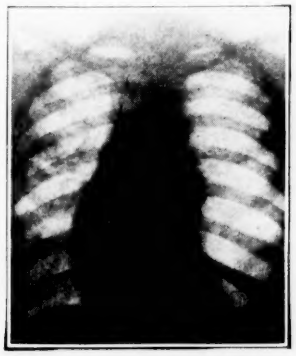

Fig. 2.—Entire lung collapsed after cauterization of adhesions.

through the tissue; the wound becomes infected, which necessitates the removal of the paraffin and defeats the purpose of the operation. However, this so seldom happens and the results have been so uniformly good that in the right type of case it is to be recommended rather than more radical surgery. The older objection on the melting points of the paraffin and its slipping or extruding through the operative wound is overcome by the newer formulas. This paraffin (with the consistency of putty) packed into the cavity produced by the pneumolysis seldom gives trouble. It seems to offer much better results than any other foreign substance so far advocated. The fat pack, with or without a pedicle, has not proved nearly as successful in our work.

The results over a three-year period show 45 per cent of the patients clinically well and 27 per cent dead. This seems to compare favorably with other methods of compression.

An upper-stage thoracoplasty with mild silver protein pack, the operation of choice, was devised by Dr. Joseph Casper of Fitzsimons General Hospital, Denver. This was described before the American Sanatorium Association meeting last year.[3] It is to be chosen rather than the paraffin pack unless the patient, as we have stated before, is a poor surgical risk. Here the chance of infection is reduced to a minimum, since the operative wound remains open and access can be gained for any infection that may develop.

The patient has the added advantage of a selective collapse, since the lower part of the lung still functions.

Fig. 3.—Fibroid upper part of lung with cavity; pneumothorax impossible because of adhesions.

Fig. 4.—Cavity entirely closed following extrapleural pneumolysis and fat transplant. The fat sloughed and the cavity was kept closed with a pneumatic bag until healing was established.

Needless to say, unless the remaining lung is free from active disease, this operation as well as the paraffin pack is contraindicated, and a complete thoracoplasty must be advised. Our series in this type of operation is too small to warrant conclusions, but the results as to arrested tuberculosis compare favorably with complete thoracoplasties, and the death percentage is much smaller.

### OPERATIVE TECHNIC

We shall not attempt to give the operative technic in detail, as this can be obtained from more extensive articles on the subject.

*Intrapleural Pneumolysis.*—This has been done after the Jacobæus-Unverricht method, the galvanocautery being used to sever the adhesions. In the heavy adhesions and when large vessels are visible, the adhesion is coagulated by slow heat before any cutting is done. We have had no difficulties with hemorrhage and have been able to control any bleeding by direct pressure

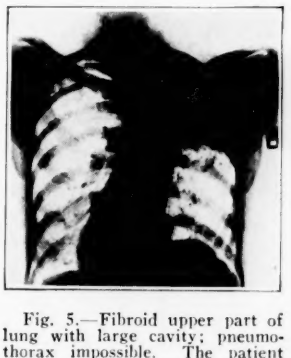

Fig. 5.—Fibroid upper part of lung with large cavity; pneumothorax impossible. The patient was too ill for extensive surgery.

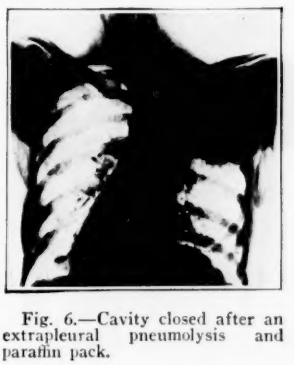

Fig. 6.—Cavity closed after an extrapleural pneumolysis and paraffin pack.

with a blunt stylet introduced through the cautery cannula.

*Extrapleural Pneumolysis (Paraffin Pack).*—This consists in resecting a portion of one rib near the apex. The excavated apex of the lung with its parietal pleura is then completely dissected away from the chest wall by finger dissection and compressed downward.

3. Bruns, E. H., and Casper, Joseph: Chest Surgery in the Treatment of Tuberculosis, Am. Rev. Tuberc. **26**: 665 (Dec.) 1932.

A paraffin mixture, warm enough to mold easily, is then packed in above the lung and pleura, after which the muscles and skin are closed without drainage.

We have found the best approach to the apex to be through a posterior incision around the scapula, with a resection of a portion of the third rib. The apex is accessible from this approach and the heavy muscle covering holds the paraffin in position. The anterior approach, resecting the second rib, is simpler, but we have found that fluid formation, necessitating aspiration, is more common, and in two of our cases it was necessary to remove the paraffin. In none of the posterior cases have we had any trouble with the operative field.

The paraffin mixture that has been most uniformly successful consists of 75 cc. of paraffin with a melting point of 55 C. and 25 cc. of paraffin with a melting point of from 43 to 44 C.; 1 cc. of bismuth carbonate and 0.05 cc. of vioform are added, and the mixture is melted and sterilized. Before it is used it is again melted and shaken to obtain perfect uniformity and allowed to cool until it kneads readily so that it can be easily molded into the extrapleural cavity.

*Extrapleural Pneumolysis (Mild Silver Protein).*—In our operation using the mild silver protein pack, we have followed the technic of Casper, with minor changes. A regular upper-stage posterior thoracoplasty is done, rather long sections of from four to six ribs being resected, enough to embrace all the pathologic area. The parietal pleura and intercostal bundles, together with the periosteum, are then dissected off well down to the spinal gutter and laterally for 2 or 3 inches. The anterior attachments of the apex are not disturbed. Thus, the whole upper portion of the lung can be compressed against the anterior chest wall. It is packed down with gauze bandage soaked in 25 per cent mild silver protein. The muscles and skin are then closed over this, enough opening being left at the lower angle of the wound to give easy access for repacking. The first pack is removed in from seven to ten days. Repacking is then done every seven days until the compressed lung is set, after which the wound is allowed to granulate in.

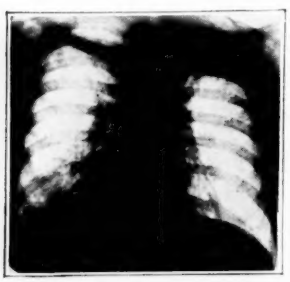

Fig. 7.—Fibroid upper part of lung with cavitation.

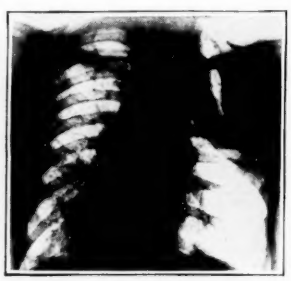

Fig. 8.—Cavity entirely closed after upper-stage thoracoplasty with mild silver protein pack.

## CONCLUSIONS

1. There is more to the treatment of pulmonary tuberculosis than a policy of watchful waiting over an indefinite period, with the anticipation that nature will close cavities and heal an advanced disease.

2. Compression therapy is a recognized treatment for pulmonary tuberculosis.

3. Compression therapy, to be effective, must be complete.

4. Both intrapleural and extrapleural pneumolysis offer marked advantages for cavity closure when the usual forms of compression have failed.

5. Closed intrapleural pneumolysis is much safer and should be preferred to the open operation.

6. Extrapleural pneumolysis, with the paraffin pack, is an excellent substitute for the Casper operation when the patient is a poor surgical risk.

7. Extrapleural pneumolysis with an upper stage thoracoplasty and a mild silver protein pack after the method of Casper is the operation of preference when the patient's condition warrants radical surgery.

## ABSTRACT OF DISCUSSION

DR. J. A. MYERS, Minneapolis: In 1917, Riviere said: "No more hopeful ray of sunshine has ever come to illumine the dark kingdoms of disease than that introduced into the path of the consumptive through the discovery of artificial pneumothorax." At that time, however, physicians did not know how to diagnose tuberculosis early. The vast majority of cases were moderately or far advanced when first detected. A great many of them already presented adhesions, which made satisfactory collapse by artificial pneumothorax impossible. It has been learned that by waiting until patients come because of symptoms, more than 80 per cent are in a moderately or far advanced condition and many of them cannot have satisfactory collapse by artificial pneumothorax. If the very best use of collapse therapy is to be made, physicians must go into communities with the tuberculin test, the physical examination, the x-ray film and other methods and find cases of pulmonary tuberculosis before the patients have fallen ill. Then by means of artificial pneumothorax many lesions can be directed toward healing. It isn't very long ago that artificial pneumothorax was spoken of as a measure of last resort. It was administered only after everything else had been tried. Now it is not considered sacrilegious for the physician to institute artificial pneumothorax in the minimal progressive case, nor is it malpractice to institute artificial pneumothorax in selected cases and keep the patients ambulatory. Even when this is done, there are patients who have already developed adhesions which make satisfactory collapse by artificial pneumothorax impossible. The authors called attention to the fact that for such patients not all hope has gone. Pneumolysis makes satisfactory collapse possible in many. Thus, they accomplish two worth-while results: Many who would be invalids for the rest of their lives are restored to good working capacities and actually enjoy life; their lesions are closed, so that they are no longer spreaders of tubercle bacilli.

**Pardee Wave Provoked by Therapeutic Dose of Digitalis.**—Duclos, in the *Archivos de cardiologia y hematologia* for April, presents a case in which the effects of a therapeutic dose of digitalis are interesting from the standpoint of electrocardiography. An electrocardiogram taken just prior to commencing digitalization exhibited left ventricular preponderance and an isoelectric T wave in the first lead. The patient was in a state of cardiac insufficiency. After seventy drops of digitalis had been administered to the patient in four days, a new electrocardiogram was taken. This time a characteristic Pardee wave was seen in leads 1 and 3 with other anomalies of the QRS complex which suggested an inhibition or hypofunction of a certain segment of the myocardium of a functional nature. The author considered it as such because in the two weeks after the digitalis treatment was abandoned the electrocardiographic tracing gradually resumed its original form. Taking into consideration the antecedents of the patient and his first electrocardiogram with an isoelectric T wave in the first lead, the author believes that an alteration of the coronary system existed. As a result of this organic change of the coronaries the arterial system suffered the consequences of the vasoconstrictor power of the digitalis, against which normal individuals defend themselves by mechanisms which produce vasodilatation. This case is an objective demonstration of the vasoconstrictor power of digitalis and a lesson as to the conduct to follow in digitalization of patients suspected of having an organic or functional disease of the coronaries.

# LIVER SEQUESTRATION AFTER CHOLECYSTECTOMY

## REPORT OF CASE, WITH REVIEW OF EXPERIMENTAL AND CLINICAL OBSERVATIONS

HERMAN SHANN, M.D.
AND
WILLIAM Z. FRADKIN, M.D.
Attending Surgeon and Assistant Surgeon, Respectively, Jewish Hospital of Brooklyn
BROOKLYN

Anemic infarction of the liver with subsequent separation of the necrotic tissue and its removal at operation is an unusual clinical condition. A thorough search of the literature from 1878 to date revealed many cases of liver sequestration but no case reports following a cholecystectomy. Because of the extremely abundant double blood supply to the liver, an anemic infarct is in itself a rarity. Operations for the direct removal of liver sequestrums have never been done because of the difficulty in diagnosis. The condition is usually associated with a history of physical or surgical trauma. In the case to be described, the sequestrum was an unexpected finding two months after a cholecystectomy had been performed.

### REPORT OF CASE

D. S., a white woman, aged 48, born in Russia, married, was admitted to the Jewish Hospital of Brooklyn, Oct. 12, 1932, in the surgical service of Dr. Herman Shann. At the time of admission the patient complained of pain in the right upper quadrant, radiating to the back and shoulder, associated with nausea. The past history revealed that she had intermittent attacks of pain in the gallbladder region for more than five years. The attacks were precipitated by fatty foods or heavy meals. There was no vomiting, jaundice, or clay colored stools.

Physical examination at the time of admission was essentially negative, except for abdominal tenderness and resistance in the right upper quadrant. A diagnosis of chronic cholecystitis with cholelithiasis was made. The patient was operated on by Dr. Shann, Oct. 13, 1932, and a cholecystectomy and appendectomy was done. At operation the gallbladder was found buried in a mass of dense old adhesions involving the stomach, colon and lesser omentum. The gallbladder contained numerous small stones. The appendix was long and atrophic, the mesentery markedly infiltrated and friable. The pathologist reported that the gallbladder was 8 cm. long, pale, smooth and glistening, the wall somewhat thickened, the mucosa brown, granular and scarred. The contents consisted of thick brown bile and several bile pigment calculi. Microscopically the gallbladder serosa was thickened and fibrous, the muscularis was hyertrophied, and the mucosa was papillomatous with a moderate degree of round cell infiltration. The appendix was 6.5 cm. long, pale, smooth and glistening, the wall thin and the lumen obliterated. Microscopically the appendix showed a diffuse fibrous tissue reaction involving all the coats of the organ. The pathologic diagnosis was fibrosis of the appendix and papillomatous cholecystitis with cholelithiasis.

The patient made a very satisfactory operative recovery except that there was a considerable amount of biliary drainage through a small sinus in the center of the wound. She was discharged, Nov. 9, 1932, approximately three weeks after operation. The biliary drainage continued while the patient was home. In view of the possibility of an overlooked common duct stone or injury to the common duct, the patient was readmitted to the hospital, Dec. 8, 1932.

At the second admission the patient was found to be in good general condition. The chest was normal. Examination of the abdomen revealed a small sinus through which golden yellow bile was draining profusely. No abdominal masses, tenderness or rigidity was found. Temperature, pulse and respiration were normal. The stools were not clay colored. There was no jaundice and no itching of the skin. The appetite, however, was poor. She had no abdominal pain or vomiting and no recurrence of the previous symptoms. Laboratory examinations revealed the urine normal except for a trace of albumin and a few hyaline casts. Red blood cells numbered 3,900,000; white blood cells, 9,750, with 73 per cent polymorphonuclears. The sedimentation time was sixty minutes. Hemoglobin was 75 per cent (Dare). The Wassermann and Kahn tests were negative. The coagulation time was four and one-half minutes; the bleeding time, one and one-half minutes. The blood chemistry was normal. The icterus index was 20; bilirubin direct positive and indirect, 4.2 units. The bromsulphthalein test returned 40 per cent in one-half hour.

December 10, two months after the first operation, the patient was taken to the operating room and the abdomen was reopened by Dr. Shann under spinal anesthesia. A probe in the fistulous tract led to a collection of bile and purulent fluid under the liver. Massive adhesions obscured from view the lower edge of the liver, stomach and duodenum. After much difficulty the stomach was exposed and the pylorus and duodenum were freed from the liver. When the inferior surface of the liver had been exposed, a most unusual picture presented itself. A large mass of grayish white necrotic tissue about 10 cm. long and 5 cm. wide occupied the region to the right of the former gallbladder fossa (fig. 1). It appeared as though a sponge might have been left in the abdomen during the previous operation.

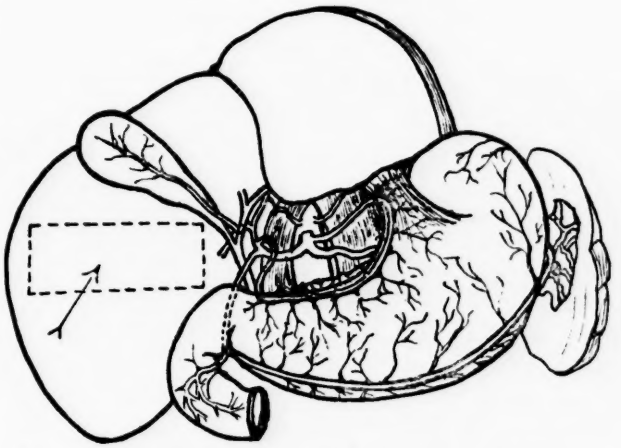

Fig. 1.—Inferior surface of liver, showing location of necrotic mass.

However, with slight traction this sloughing mass was readily withdrawn, exposing a deep cavity in the liver lined with rough granulation tissue. There was no bleeding. An attempt was made to locate the common bile duct but this was abandoned in view of the massive adhesions, the presence of suppuration and the prolonged operation. The cavity was packed and drained with iodoform gauze and the abdomen closed.

The pathologic report by Dr. Max Lederer described an irregular mass of tissue measuring 10 by 3 by 5 cm., soft in consistency and grayish white. On section it was suggestive of hepatic structure. Microscopically the mass was found to consist mainly of necrotic liver tissue, ghosts of blood vessels, and clumps of bacteria. Bordering the necrotic area was a narrow zone of marked leukocytic infiltration. Outside this zone there were still remains of pigmented liver cells (fig. 2), blood vessels and bile capillaries. One large hepatic blood vessel contained an organized thrombus. Its wall was extensively infiltrated with polymorphonuclear leukocytes (fig. 3). The diagnosis was gangrenous liver tissue.

A roentgenographic study with iodized oil, Feb. 21, 1933, by Dr. Milton Wasch revealed a sinus that passed upward and backward almost to the level of the diaphragm. The sinus tracts were too large and coarse (fig. 4) to be considered as involving the biliary ducts, so that he was inclined to think that they were the result of the pathologic process.

Another roentgen examination, March 8, showed a few droplets of the previously injected iodized oil (fig. 5). The wound continued to drain golden yellow bile up to March 26. At this time the drainage practically ceased and the patient

was discharged from the hospital. At present the wound is healed except for a small sinus still discharging a few drops of bile-stained secretion.[1] The patient's general condition is very good.

### COMMENTS AND GENERAL CONSIDERATION

Considering the numerous operations performed on the gallbladder, the biliary ducts and their adjacent

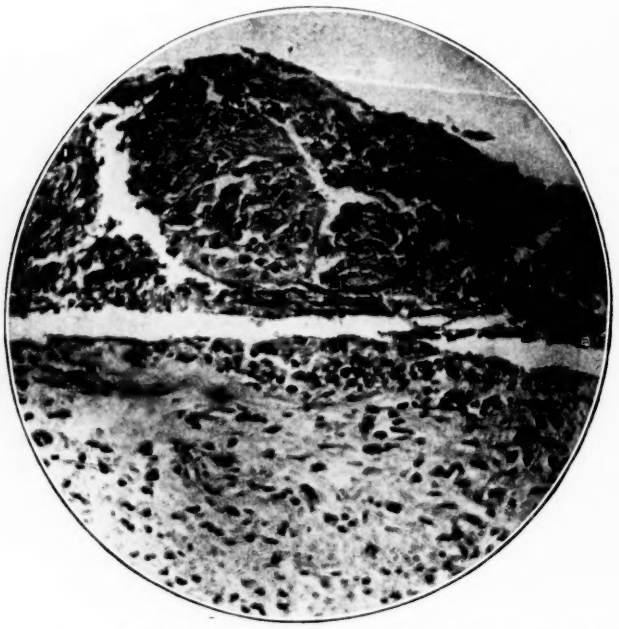

Fig. 2.—Section showing remains of liver cells and beginning fibrosis.

organs, it is remarkable that there are so few case reports of injuries to the hepatic vessels and their important branches which are followed by liver necrosis. To interpret properly the unusual phenomenon in the case reported, a thorough understanding of the vascular supply of the liver and the frequent anomalous departures is absolutely essential. Budde [1a] and Behrend [2] called attention to certain anomalies of the hepatic artery which are of considerable interest from a surgical point of view. According to Behrend, accidental ligation of the hepatic artery or one of its larger branches, during an operation, may not be an infrequent occurrence. In his extensive studies he was able to demonstrate the following conditions:

1. The hepatic artery proper may be double.
2. There may be many accessory hepatic arteries.
3. The hepatic artery may be tortuous and in close relation to the biliary ducts.
4. The cystic artery may be branched, and these branches may anastomose with one another. It may happen, therefore, that, after ligation of the cystic artery, profuse bleeding may follow from one of its branches. In the confusion that usually follows, the hepatic artery or one of its branches may be clamped, especially when the stem is very short.

*Frequency of and Clinical Results Following Ligation of a Branch of the Hepatic Artery.*—How often is the hepatic artery or its main branches ligated during an operation? There are probably a great many cases in which ligation of a branch of the hepatic artery was performed accidentally or intentionally without serious consequences to the patient. Thus, Kehr [3] reported an operation on a man, aged 29, for aneurysm of the cystic artery. He found a pulsating tumor the size of a hen's egg at the neck of the gallbladder. The right branch of the hepatic artery was ligated and cut between two ligatures. Two weeks later, while he was redressing the wound, the anterior border of the right lobe of the liver appeared dry and necrotic. After another few days the liver edge separated and exposed a cavity 2 cm. in depth. The patient recovered.

Bakes [4] also reported a difficult cholecystectomy operation in which the cystic duct and artery were encased in strong fibrous adhesions. During the dissection very severe arterial bleeding occurred, which was controlled by ligation of the vessel. Whether it was the main right branch of the hepatic artery or an accessory vessel could not be determined because of the extensive adhesions. The fact remains that the vessel was an artery and of large caliber. Fourteen days later the wound was clean and the patient was apparently doing well. The author does not state further details of the case.

Narath [5] operated on a woman for a large chronic penetrating gastric ulcer. Because of the difficulty of the operation, profuse arterial bleeding started at the hilus of the liver. The artery was found, clamped and ligated. A circular gastric resection was performed. The patient lived only six days after operation. On postmortem examination the entire left lobe of the liver was found necrotic. Investigation disclosed a thrombosed and ligated left branch of the hepatic artery. The right branch as well as the right lobe of

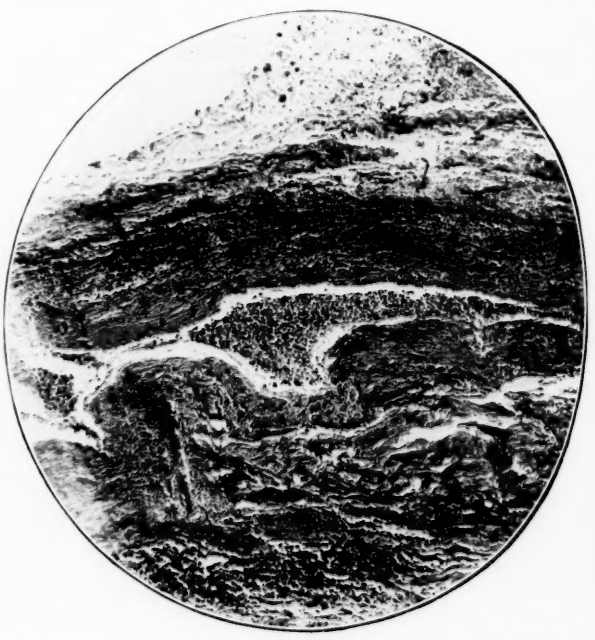

Fig. 3.—Section showing thick walled thrombosed blood vessel with extensive leukocytic infiltration of its wall.

the liver was normal. The cause of death was a perforation through the posterior line of sutures in the stomach anastomosis. Gastric and duodenal contents

1. The sinus is now completely healed.
1a. Budde: Beitrage zur Kenntnis der Topographie der normalen Art. hepatica und ihre Varietaten, Deutsche. Ztschr. f. Chir. **86:** 18-40, 1907.
2. Behrend, Moses: Surgical Diseases of the Gallbladder, Liver and Pancreas, and Their Treatment, Philadelphia, F. A. Davis Company, 1927.
3. Kehr, H.: Der 1. Fall von erfolgreicher Unterbindung der Art. hepatica propria wegen Aneurysma, München. med. Wchnschr. **50:** 1861-1867, 1903.
4. Bakes, J.: Diskussionsbemerkung: Verhandl. d. Deutsch. Gesellsch. f. Chir., thirty-third congress **1:** 82, 1904.
5. Narath, A.: Ueber die Unterbindung der Arteria hepatica, Beitr. z. klin. Chir. **65:** 504, 1909.

were found free in the peritoneal cavity. Were it not for this accident the patient might have recovered.

Hofmeisber [6] reported a case in which it was necessary to ligate the hepatic artery above the right gastric branch to remove a tumor. Recovery was uneventful.

*Mechanism of the Production of Anemic Infarcts in the Liver.*—Aschoff [7] is of the opinion that anemic

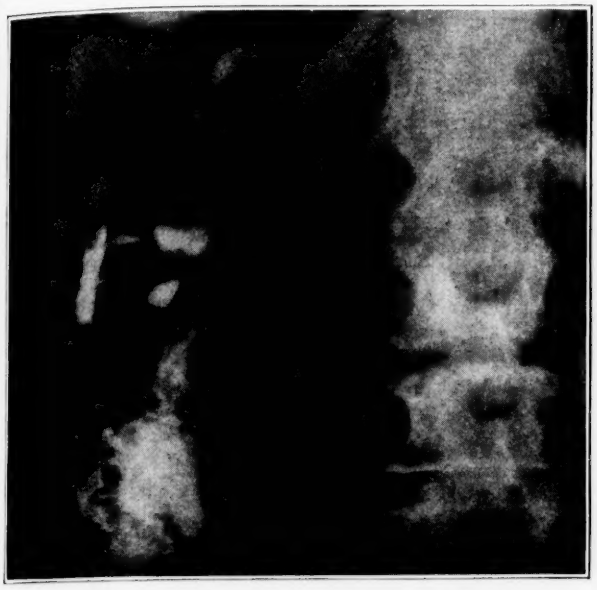

Fig. 4.—Sinus tract extending almost to level of diaphragm.

infarcts in the liver are the result of an obstruction to one of the branches of the hepatic artery associated with an inadequate collateral circulation and myocardial insufficiency. According to Kaufmann,[8] atrophy and extensive necrosis of the liver may follow the occlusion of the portal vein twigs beyond the interlobular anastomoses, or it may occur as a result of the obliteration of the interlobular branches of the portal vein. Henke and Lubarsch [9] refer to many reports of cases in which anemic infarction of the liver resulted from emboli originating in endocardial vegetations, omental vein thrombi, or infection of the hepatic artery. The most important cause of anemic infarction, however, is occlusion of the hepatic artery.

Experimentally, Cohnheim and Litten [10] studied the hepatic circulation in the rabbit and demonstrated that interference with the arterial flow always resulted in complete necrosis of the liver with rapid death of the animal. Ligation of the artery in the dog may not necessarily be fatal. Haberer [11] conducted numerous experiments on dogs, cats and rabbits. He found that ligating the hepatic artery after it gives off the gastroduodenal branch was well tolerated by the animals, because collateral circulation was rapidly established. But on ligation of the hepatic artery after the right gastric branch is given off, liver necrosis and rapid death of the animals occurred. Ligation of the hepatic artery near its origin produced more or less complete necrosis of the liver. In the animals that survived the operation, Haberer found arterial blood carried to the liver by tiny branches from the diaphragmatic arteries. Doyon and Doufourt,[12] on the other hand, observed that if the hepatic artery was ligated near its origin, circulation could be reestablished in the liver by way of the left gastric, splenic and superior mesenteric arteries. Loeffler [13] ligated the hepatic artery in a rabbit and examined the liver at regular intervals. He found that most of the blood of the hepatic artery supplies the biliary ducts, the gallbladder and a small part of the nerves of the liver. According to this author, exclusion of the hepatic artery does not lead directly to necrosis.

Narath,[14] in his classic experiments on the ligation of the hepatic artery, came to the following conclusions:

1. The common hepatic artery may be ligated, provided there is at least one vessel left to start a collateral circulation.

2. Focal necrosis of the liver may follow the ligation of the hepatic artery proper below the origin of the right gastric artery. It should be done only as a life saving measure.

3. The ligation of the hepatic artery proper will lead to liver necrosis.

4. The right or left hepatic branches of the artery should not be ligated except in cases in which an aneurysm exists along the course of the vessel.

5. In case of vascular injury, the ligature should be placed as close as possible to the seat of injury of the vessel in order to avoid ligating any possible collateral branches.

Recently, Zimmermann [15] found that occlusion of the hepatic artery always produced anemic necrosis even

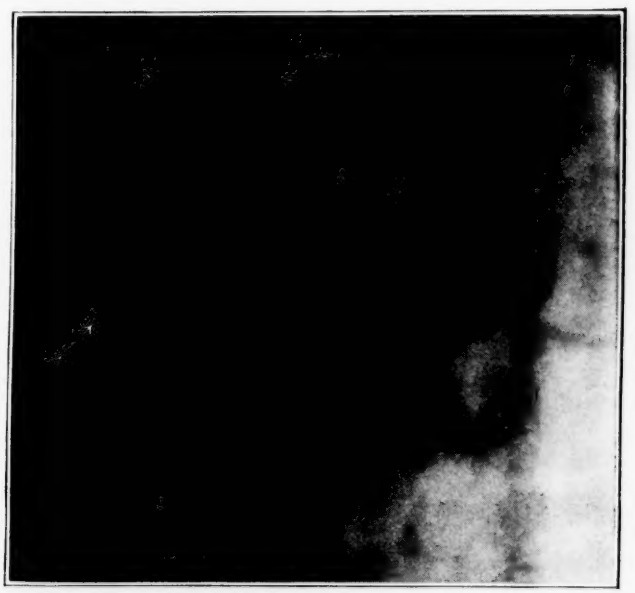

Fig. 5.—Fifteen days later: only a few droplets of iodized oil left in sinus tract.

when a collateral circulation was established. This is the present consensus among most investigators.

6. Hofmeisber, I.: Legatura dell'a epatica propria senza nocumento del fegato, Pathologica **16:** 109, 1924.
7. Aschoff, Ludwig: Pathologische Anatomie, Jena, Gustav Fischer **2:** 872, 1928.
8. Kaufmann, Edward: Pathology for Students and Practitioners, Philadelphia, P. Blakiston's Son & Co., 1929.
9. Henke, F., and Lubarsch, O.: Handbuch der speziellen pathologischen Anatomie und Histologie, Leber, vol. 5, part 1, Berlin, Julius Springer.
10. Cohnheim, Julius, and Litten, M.: Ueber Circulationstorungen in der Leber, Virchows, Arch. f. path. Anat. **67:** 163, 1876.
11. Haberer, Hans: Experimentelle Unterbindung der Leber-arterie, Arch. f. klin. Chir. **78:** 557-587, 1905.
12. Doyon and Doufourt: Contribution a l'étude de la fonction uréopoiétique du foie; effects de la ligature de l'hépatique et de celle de la reine porte, Arch. de physiol. norm. et path. **10:** 522, 1898.
13. Loefiler, Louis: Leberstudien (Die Folgen der Unterbindung der Leberarterie), Virchows Arch. f. path. Anat. **266:** 65-98, 1927.
14. Narath, Albert: Die Arteriovenose Anostomosis an der Pfortader als Mittel zur Verhütung der Lebernekrose nach Unterbindung der Arteria hepatica, Centralbl. f. Chir. **42:** 1-4, 1915.
15. Zimmermann, H. M.: Leberinfarkte und der Mechanismus ihrer Entstehung, Centralbl. f. allg. Path. **50:** 158, 1931.

*Clinical Results Following Sequestration of Liver Tissue.*—Graser [16] reported a laparotomy on a man, aged 49, who showed signs of a rapidly growing sarcoma of the spleen with cystic degeneration. The operation revealed a large subphrenic abscess with sequestration of portions of liver tissue. On being questioned as to any previous abdominal injury, the patient stated that he fell from a height of about 15 feet, nine months before, and was unconscious for many hours. The patient recovered from the operation.

Nordmann [17] reported an operation on a youth, aged 18, who accidentally fell out of a third story window. The operation revealed a large quantity of blood in the abdomen, and a mass of liver tissue the size of a hen's egg, free behind the upper right lobe of the liver. The liver laceration was packed with iodoform gauze. A subphrenic abscess developed. After twenty days more sequestrums of liver tissue were found and removed with the packing. The patient recovered.

Fertig [18] reported two cases of sequestration of liver tissue. The first case was that of a man, aged 21, who received an abdominal injury. Nineteen days later at laparotomy a large subphrenic abscess was found. It was packed with iodoform gauze and the wound continued to drain bile profusely for seven weeks. The patient did not fare well. Fifteen weeks later a mass of necrotic liver tissue was drawn out from the wound with the packing. Thereafter convalescence was rapid and the patient made a complete recovery. The second case was that of a boy, aged 14 years, who was injured when the rear wheel of a wagon passed over his abdomen. At operation, forty-eight hours later, a ruptured liver was found with almost complete separation of the left lobe, except for the coronary ligament. The lobe appeared pale, yellow and bloodless. The laceration was packed with iodoform gauze, walling off the left lobe with the expectation that it would sequestrate. Fifty-four days later while the packing was being changed, the entire left lobe of the liver was pulled out. The patient made an uneventful recovery.

Biernath [19] reported the case of a man, aged 25, who received a crushing blow to the upper part of the abdomen. At operation, almost complete separation of the right from the left lobe of the liver was found. The tear was packed with iodoform gauze. Two weeks later, while the packing was being changed, the necrotic left lobe of the liver was pulled out. The patient made a complete recovery.

Large anemic infarcts of the liver often heal by encapsulation and absorption. Thus, Chiari [20] reported a case in which a man received a crushing blow to the abdomen but was not operated on. He died later, however, of a severe gastric hemorrhage. At autopsy the right lobe of the liver appeared normal but the left lobe was missing. The injured surface was covered with fine granulation tissue. The torn ends of the hepatic vessels were thrombosed. Near the spleen, a necrotic mass was found measuring 16 by 10 by 4.5 cm. On section it was recognized as the missing left lobe of the liver. In the stomach along the lesser curvature a deep peptic ulcer was found, measuring 2 cm. in diameter and exposing at its base the eroded stem of an artery about 1 mm. in diameter.

16. Graser, E.: Ueber traumatische Leberruptur mit späterer Ausstossung grosser Lebersequester, Arch. f. klin. Chir. **74**: 533-538, 1904.
17. Nordmann, C.: Ein Fall von Leberruptur, Centralbl. f. Chir. **8**: 24, 1908.
18. Fertig, J.: Traumatische Leberrupturen mit späterer Ausstossung grosser Lebersequester, Deutsche Ztschr. f. Chir. **87**: 87, 1907.
19. Biernath, P. K.: Ueber subkutane Leberruptur mit späterer Ausstossung grosserer Lebersequester und deren Behandlung, Arch. f. klin. Chir. **90**: 73, 1909.
20. Chiari, H.: Ueber eine in Spontanheilung begriffene totale Abreissung des linken Leberlappens, Berl. klin. Wchnschr. **36**: 1629, 1908.

### SUMMARY AND CONCLUSIONS

In the case reported here, a large liver sequestrum was removed at a second operation two months after a primary cholecystectomy.

Accidental ligation of the hepatic artery or one of its larger branches will cause anemic infarction, with sequestration of liver tissue.

Anomalies of the hepatic artery or its branches or their anomalous course may be responsible for accidental ligation.

1453 Union Street.

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# CONGENITAL AIR CYST OF THE LUNG

## REPORT OF CASE

C. V. CROSWELL, M.D.
AND
J. CASH KING, M.D.
MEMPHIS, TENN.

For two and a half years we observed a 3 year old boy, whose entire left thoracic cavity was filled with a balloon-like cyst. His condition varied from that of threatened asphyxia to that of restful normal breathing, relief being effected only by aspirating from 8,000 to 10,000 cc. of air from this sac every four to six hours. During the periods of relief, he was able to take nourishment and rest as if in preparation for the exhausting symptoms that were sure to return.

Few large solitary air cysts or "balloon cysts" of the lung have been reported in the American literature. This is shown by Koontz,[1] who made an extensive review in 1925 and tabulated 108 cases; of these, only 7 were of the large solitary type. We have found twelve additional cases reported in the American literature since 1925. The case reported here brings the total to 121 to the present time. It is interesting to note that these cysts are usually unilateral and develop in the left lung far more frequently than in the right. The present case is of interest because the patient has made an apparent recovery from a condition that usually terminates fatally when it occurs at this early stage of life, and the results obtained seem to suggest some worth-while therapeutic measures.

### REPORT OF CASE

*History.*—N. D., a white boy, aged 3 years, was the second child of normal, healthy parents. At birth he weighed 8 pounds (3,630 Gm.). Until he was 5 months of age, he was in good health; at that time he had an acute illness, which was diagnosed as bronchial pneumonia. He recovered completely from this condition and, with the exception of frequent colds, remained well until he was 12 months of age. Then for three consecutive months similar pulmonary infections developed, the last of which was complicated by a left otitis media that necessitated myringotomy. At this time the child expectorated large amounts of thin yellow pus, an ounce frequently being raised during a paroxysm of coughing. Although the acute manifestations of the last illness subsided, dyspnea of an asthmatic type persisted. This dyspnea continued and the child became weak and apathetic.

*Examination.*—The infant was cyanotic and markedly dyspneic; there were a definite expiratory grunt and frequent attacks of coughing. These were all exaggerated when he cried. The physical observations, with the exception of those of the chest,

1. Koontz, A. R.: Congenital Cyst of the Lung, Bull. Johns Hopkins Hosp. **37**: 340-361 (Nov.) 1925.

were unimportant. His temperature was 101 F. (rectal); pulse, 140; respiration rate, 70. The thorax was barrel-like; the left side was more distended than the right and moved through a more limited area. This fulness extended down over the left epigastrium. Cardiac dulness was displaced, with the apex to the right of the lower border of the sternum. The heart sounds were distant and rapid. The entire left and the upper part of the right chest were hyperresonant. Breath sounds were absent over the left side of the chest but exaggerated over the right lung posterior and in the axillary region.

Examination of the blood revealed: white blood cells, 9,750; polymorphonuclears, 40 per cent; lymphocytes, 55 per cent; eosinophils, 2 per cent; large monocytes, 3 per cent, and hemoglobin, 80 per cent. Analysis of the urine was negative. On all occasions the Kahn and Wassermann reactions were negative. The Mantoux test was negative in dilutions of 1:1,000 and 1:500.

A roentgenologic consultation revealed that there was complete absence of normal lung tissue in the left side of the chest. This entire cavity was filled with air, which had displaced the heart and the mediastinal structures well over to the right. The left side of the diaphragm was displaced downward and there appeared to be a herniation of this air sac through the anterior superior mediastinum, producing a balloon-like projection that extended almost to the parietal pleura. On fluoroscopic examination it was evident that air pressure in the left side of the chest became greater during inspiration. The right lung was displaced laterally and completely collapsed, except for a small portion of the middle and lower lobes (figs. 1 and 2).

The probable diagnosis was complete pneumothorax on the left with a patent bronchial connection; the air trapped in the left pleural cavity was under marked pressure.

During the patient's hospitalization, several consultations were held. Various diagnoses were made, including bilateral pneumothorax, obstruction of the main bronchus by a foreign body, and diaphragmatic hernia. Bronchoscopic examination failed to reveal any foreign body but showed that the left main bronchus was stenosed as if from outside pressure. Following this investigation it was agreed that the child's outlook was nearly hopeless. No relief was obtained until after 4,000 cc. of air was aspirated from the left lung. A final diagnosis was not made until we had read the article of Parmalee and Apfelbach [2] reporting a case of congenital air cyst of the lung.

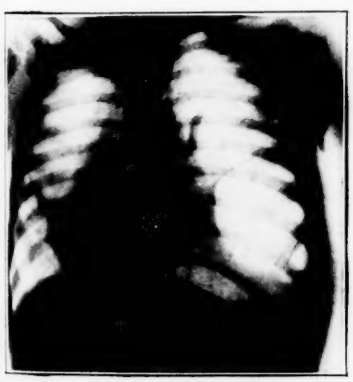


Fig. 1.—Air cyst replacing the left lung and extending through the anterior superior mediastinum, displacing the entire upper lobe of the right lung. There is a displacement of the heart to the right of the midline.

Further inquiry into the literature proved most discouraging, as in all the reported cases of this type the patient had lived only a short time and in the majority the diagnosis was not made until necropsy.

In spite of these reports, however, we were able to keep the child alive by aspirating air every four to six hours. This procedure was facilitated by the use of a special one-way valve mechanism assembled with a tube into the cyst cavity.

Realizing that our therapy was transient in character and offered only temporary relief at best, we decided that if relief was to be permanent it had to be obtained through some surgical measure. Dr. Graham of St. Louis was consulted. The diagnosis of air cyst of the lung was confirmed by injecting iodized poppy-seed oil into the cyst cavity; this procedure also proved that the air sac over the right upper portion of the chest was a part of the cystic cavity of the left lung. It was concluded that surgery was inadvisable because of the extensive involvement and because of the gravity of the patient's general condition. A hopeless prognosis was given, and we were advised to continue with the treatment.

Seven days after the iodized oil was injected the child appeared much better. Aspiration of the chest on this date yielded only 500 cc. of air, the removal of which seemed to produce cyanosis. No more aspirations were done until four days later, at which time fever of 105 F. developed. The chest was again aspirated, and 30 cc. of thick, straw colored fluid was obtained. The hyperpyrexia continued for several days, but the child improved steadily. The dyspnea subsided, which promoted rest and made it possible for the patient to retain enough nourishment to begin to gain. Another roentgen examination revealed a cystic air sac almost completely collapsed (fig. 3). The right lung and mediastinal structures had returned to their normal positions. The cyst proper and the left pleural cavity still contained most, if not all, of the iodized oil. The child's progress has been satisfactory and uneventful to date (Jan. 19, 1933), except for one acute infection of the upper respiratory tract (fig. 4).

Fig. 2.—Anteroposterior view of the chest after the injection of iodized poppy-seed oil into the cyst cavity. The film was made two months after the one shown in figure 1. The iodized oil injected through the left chest wall could be shifted to any part of the large cyst by changing the position of the child.

## COMMENT

This case of congenital air cyst of the lung is of unusual significance in that the patient apparently has made a complete recovery. The majority of infants in whom the abnormality had been reported previously lived only a short time after the onset of symptoms.

Congenital cystic disease of the lung occurs in two forms: (1) the solitary cyst, which is usually large, and (2) the multiple small cysts, which involve a part or all of a lung. In the former type, when symptoms do occur in childhood, they are, as a rule, extremely severe and carry a grave prognosis.

The following symptoms should lead one to suspect congenital cystic disease of the lung: unexplained attacks of dyspnea and cyanosis with the signs of pneumothorax; i. e., hyperresonance and greatly diminished breath sounds on the affected side and exaggerated breath sounds and displacement of the heart and mediastinum to the opposite side. Especially significant are these symptoms when the past history discloses recurrent periods of labored breathing and when no evidence of pulmonary infection or trauma is present to explain the development of pneumothorax. The roentgenograms will in most cases show a large air sac that often replaces the normal lung tissue of an entire lobe or lung, suggesting at first glance partial or complete pneumothorax on the affected side. The diagnosis should be made from the history and roentgen observations. The differential diagnosis includes pneumothorax, diaphragmatic hernia, and foreign body in one of the larger bronchi with a resulting atelectasis. The clinical difference between this condition and pneumothorax with patent bronchial connection cannot be made by physical examination. It is only by a close study of the roentgenograms that a definite difference can be demonstrated. The roentgenogram of pneumothorax shows the lung stump at the hilus, and the diaphragm often curves downward rather than upward. In cystic

2. Parmalee, A. H., and Apfelbach, C. W.: Congenital Air Cyst of the Lung, Am. J. Dis. Child. **41**: 1380-1388 (June) 1931.

disease of the lung there is usually an outline of the cyst wall shown on the film. Roentgen studies after injections of iodized poppy-seed oil, as used in our case, will often be of material aid in making a correct diagnosis, and it is possible that it has some therapeutic value. The multiple type of congenital cyst of the lung may produce symptoms during infancy, but the cases reported in the literature indicate that this type of the disease is discovered more often during adolescence or adult life. The symptoms are usually not so sudden in onset and do not always indicate the true gravity of the condition. However, in cases in which the cysts are so diffusely distributed that they replace an appreciable portion of normal lung tissue the symptoms may be as severe as those observed in the active state of the large solitary type. This was true in Nelson's case.[3] The roentgenograms vary considerably in appearance from time to time in the same case, as is explained by the variation in the amount of fluid present in the cystic cavities. Here the differential diagnosis must include lung abscess and empyema, as well as the other conditions mentioned under this heading in the large solitary cyst.

## ETIOLOGY

Numerous theories have been presented as to the etiology of congenital cyst of the lung, most of which postulate an embryonic defect in the development of the bronchi. Practically all the histologic studies made of the walls of these cysts have revealed the characteristics of a bronchiole. De Lange,[4] however, expressed a belief that the developmental error consists of an interference with a development of the alveolar tissue, which leaves the bronchi unsupported and thus permits undue dilatation. In Smith's case [5] a microscopic examination of the wall failed to reveal any elastic or muscle fibers, from which he concluded that they were dilatations of the atria, the openings into the bulbous terminations of the bronchioles. He also presents a convincing argument against their originating in the alveola, as his case indicated that the sacs were formed in fetal life before the time for development of alveolar tissues. The course of events leading to this condition are probably as follows: A small congenital bronchiectatic cavity, which produces no symptoms and no abnormal physical condition at birth, gradually grows in size as the infant breathes. At the bronchial opening is a one-way valve mechanism that allows air to enter the sac and inflate it but does not allow a corresponding deflation to take place. As the cavity grows in size, the bronchial radicle or radicles leading to it become more and more tortuous as they are compressed toward the hilus, thus increasing the interference with deflation. By the time the child reaches a few months of age, the sac becomes so large that respiration and circulation are embarrassed sufficiently to produce dyspnea and cyanosis.

Parmalee and Apfelbach [2] advance this theory for their case.

Another possible course of events that has occurred to us is as follows: During fetal life and a variable period of natal life, these cysts contain fluid and do not have a patent bronchial connection; then, at a certain stage, depending on the rapidity of growth and the size of the cyst, it ruptures into one or more of the bronchi, at which time the fluid contents are coughed up and replaced by air. On account of the abnormal bronchial opening, which has a definite one-way valve-like action, a sudden increase in the intracystic pressure occurs, thus bringing about a rapid growth. This causes a sudden onset of symptoms after the child is several months or years of age, although the condition has been present since birth.

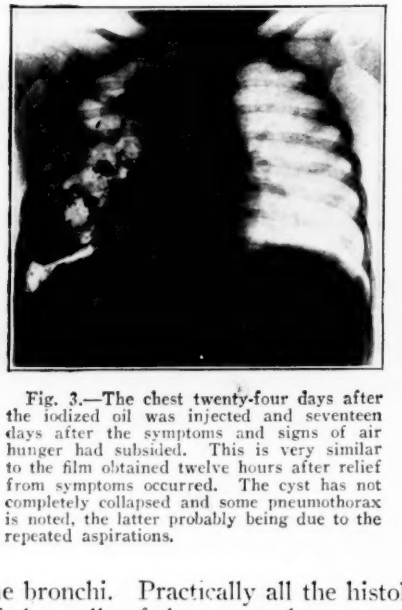


Fig. 3.—The chest twenty-four days after the iodized oil was injected and seventeen days after the symptoms and signs of air hunger had subsided. This is very similar to the film obtained twelve hours after relief from symptoms occurred. The cyst has not completely collapsed and some pneumothorax is noted, the latter probably being due to the repeated aspirations.

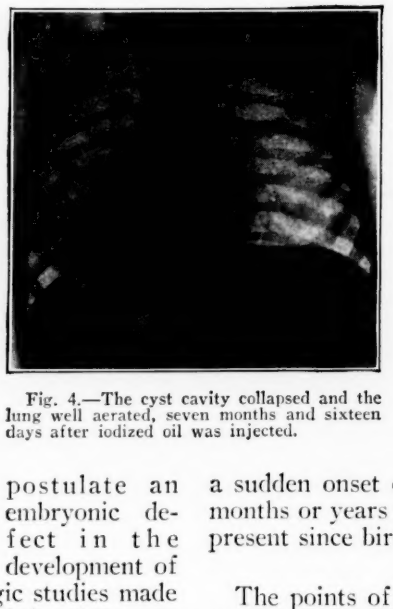


Fig. 4.—The cyst cavity collapsed and the lung well aerated, seven months and sixteen days after iodized oil was injected.

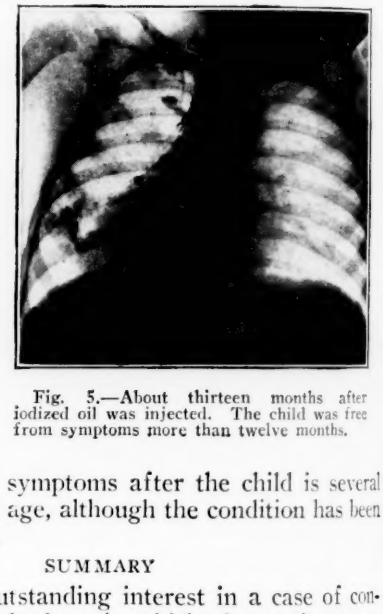


Fig. 5.—About thirteen months after iodized oil was injected. The child was free from symptoms more than twelve months.

## SUMMARY

The points of outstanding interest in a case of congenital air cyst of the lung in which observations were recorded over two years are: (1) the remarkable anatomic and pathologic changes that occurred in the lungs; (2) the relation of symptoms and signs manifested by the child during the time these changes occurred; (3) the fact that the child has been completely free from symptoms for twenty-four months and is developing like a normal child.

## CONCLUSION

In the case here reported the patient has at least made a temporary recovery which has been remarkable and unexpected. The questions arise: 1. Is the recovery permanent? 2. If so, to what particular therapeutic measure, if any, is the patient indebted? 3. If this cure is not permanent, will future attacks be as acute and as severe? We have ventured a hopeful but guarded prognosis.

1052 Madison Avenue—915 Madison Avenue.

3. Nelson, R. L.: Congenital Cystic Disease of the Lung, J. Pediat. **1**: 233 (Aug.) 1932.
4. De Lange, Cornelia: Angeborene Zystenlunge und agenetische Bronchietasie, Acta. pædiat. **6**: 352, 1927.
5. Smith, S.: Congenital Cystic Diseases of the Lungs, Brit. M. J. **1**: 1005 (May 30) 1925.

# GASTRIC EXAMINATION IN PULMONARY TUBERCULOSIS WITH NEGATIVE SPUTUM

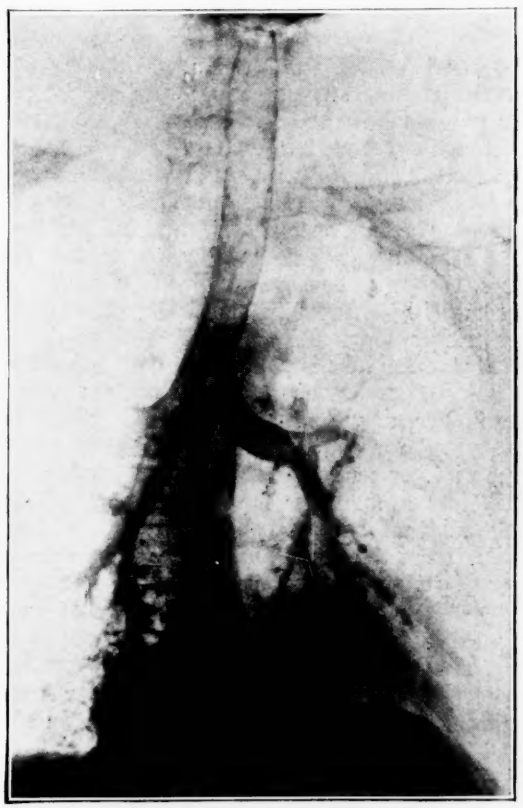
## DIAGNOSTIC IMPORTANCE

DAVID ULMAR, M.D.
AND
GEORGE G. ORNSTEIN, M.D.
NEW YORK

Recently there came under our observation a patient who had the obvious end-result of an extensive caseous-pneumonic tuberculosis [1] involving one entire lung. In spite of numerous coarse moist râles throughout that lung there was but slight expectoration. Examination of the sputum was repeatedly negative. Shortly after this incident another patient was seen who had a minimal lesion in the right apex. The pathologic condition was apparently productive in nature. Examination of the sputum was repeatedly negative. In spite of the negative sputum examinations, this patient suddenly developed a bronchogenic spread to the opposite lung. Not even at this time could tubercle bacilli be demonstrated in the sputum. Assuming in the first instance that the very nature of the pathologic condition made the presence of tubercle bacilli a foregone conclusion, and assuming in the second instance that the pathogenesis of the affair demanded free bacilli in the bronchial tree, we decided to institute a more complete search for the tubercle bacilli. Accordingly, an examination of the gastric contents was made on the theory that the sputum might have been inadvertently swallowed. Both cases showed the presence of tubercle bacilli in the gastric contents. The stimulation afforded by the success obtained in these two instances led us to attempt this diagnostic procedure in other cases. Our results are presented in detail later.

It is interesting to explain the mechanism whereby the bronchial secretion gains entrance to the stomach. As has been shown by the anatomic review of the musculature of the bronchi and lungs by Macklin,[2] there is an extensive network of muscle fibers throughout the respiratory tract. In the trachea the fiber bundles are mainly transverse, being attached to the inner aspect of the cartilaginous ring, although there is some crisscrossing to higher or lower levels. With the change in structure that is observed in the arrangement of the cartilage as the main and stem bronchi are reached, so also is there a change in the arrangement of the muscle bundles. The fibers tend to course in a more longitudinal or rather spiral direction so that the whole tube now becomes surrounded by a rather loose basket-weave of contractile tissue. This arrangement continues down to the terminal bronchiolus respiratorius, where the muscle fibers disappear. The whole muscle system is intimately associated with elastic fibers, so that the structure has been termed by some "myo-elastic." This layer of contractile tissue is vitally and actively important in the normal functioning of the lung. Its relation to the change in size and shape of the air conducting system with the lung changes that occur on inspiration and expiration has been fairly well studied and known.

A related but not so well recognized function exists in the expulsion of foreign material from the airway. Bullowa and Gottlieb [3] mentioned a bellows-like action of the bronchi. Reinberg [4] observed a peristaltic-like action of the trachea which produced the expulsion of foreign material without the necessity of cough. It remained for Hudson,[5] making use of rapid successive x-ray exposures, to demonstrate graphically this phenomenon. Using iodized oil, he noted a regular narrowing of all bronchi that seemed to originate in the peripheral portion of the bronchial tree and to be associated with the propulsion of oil toward the trachea. During expiration, the walls lost their parallel relationship and at the end of expiration in some areas the walls almost touched, a condition that was regarded as



Iodized poppy-seed oil was injected into the trachea by means of a catheter passed between the vocal cords. This shows the iodized oil in both the tracheobronchial tree and the esophagus. There is an actual spilling over of the iodized oil from the trachea into the esophagus. The patient did not cough at any time.

suggestive evidence of peristalsis. From its action on the oil, says Hudson, "it would seem that it was sufficient to empty the bronchial tree of secretions under ordinary circumstances without invoking other aid."

Since our attention has been focused on this phenomenon, we have observed several striking examples. The first case was a rather embarrassing experience for the moment. Following the injection of iodized poppy-seed oil into the bronchial tree by means of the bronchoscope, a roentgenogram demonstrated the presence of the entire amount of oil in the stomach. At no

From the Departments of Tuberculosis, Metropolitan and Sea View hospitals.

1. The term caseous-pneumonic tuberculosis is used as defined under that heading in Ornstein, G. G.; Ulmar, David, and Dittler, E. L.: A Clinical Classification of Pulmonary Tuberculosis, Am. Rev. Tuberc. **23**: 248 (March) 1931.

2. Macklin, C. C.: Musculature of Bronchi and Lungs, Physiol. Rev. **9**: 1-60 (Jan.) 1929.

3. Bullowa, J. G. M., and Gottlieb, C.: Additional Experimental Studies in Bronchial Function, Laryngoscope **32**: 284-289 (April) 1922.

4. Reinberg, S. A.: Roentgen-Ray Studies on the Physiology and Pathology of the Tracheobronchial Tree, Brit. J. Radiol. **30**: 451-455 (Dec.) 1925.

5. Hudson, W. A., and Jarre, H. A.: Cin-Ex Camera Studies of the Tracheobronchial Tree, Arch. Surg. **19**: 1236-1244 (Dec. part 2) 1929.

time did the patient cough. This was so striking that some question was raised at the time as to whether or not the oil was directly injected into the stomach. We can definitely state, however, that this was not the case. Since that time we have been fortunate enough to obtain a roentgenogram in two instances showing the actual spilling over of the iodized oil from the trachea into the esophagus. There was no coughing at any time. In one case the peristaltic action of the trachea was so marked that one of a group of nurses, watching the injection of iodized oil under the fluoroscope, asked spontaneously if the patient was vomiting—a striking reminiscence of the tracheal vomiting of Reinberg. We reproduce the roentgen study of one of these cases. The film shows the iodized oil in both the bronchial tree and the esophagus. The injection was done by means of a catheter passed between the vocal cords into the trachea. At no time did the patient cough.

### TECHNIC OF PROCEDURE

The gastric contents are obtained in the early morning before the ingestion of any food. The purpose of this is twofold. In the first place, the gastric contents are not unduly diluted by food and gastric secretion. In the second place, gastric peristalsis is minimized so that whatever has gained entry into the stomach during the sleeping period at night is more likely to remain there. From a practical standpoint in our hospital services, the directions are simple. The patient is not allowed up in the morning nor is breakfast given till the gastric contents are obtained. This is done at 7 a. m. A stomach tube is passed and the fasting contents are obtained. The stomach is then lavaged with about 100 to 200 cc. of water. The combined volume is then centrifugated for one hour. To the sediment an equal volume of 4 per cent sodium hydroxide is added. After about thirty minutes in the incubator at 38 C., the digested mixture is centrifugated for another hour. The sediment from the second mixture is then smeared on slides and stained for tubercle bacilli.

We believe that these observations are of considerable practical significance in the diagnosis of tuberculosis. In the introduction we mentioned that the routine sputum examinations in two cases were negative for tubercle bacilli, while the gastric contents showed the presence of organisms. In view of the evidence just submitted, it is highly questionable whether the examination was done on sputum at all, if one regards sputum as the bronchial contents. In all likelihood the real sputum was carried by this peristaltic action up the bronchial tree and over into the gastrointestinal tract without being expectorated. This phenomenon probably also explains the surprising lack in some cases of coughing and expectoration which the physical signs would lead one to suspect. We believe that this simple diagnostic procedure is so important that we do not consider the patient bacillus free until the gastric content as well as the sputum is so found. This is also of especial importance in those cases in which the normal cough mechanism has been interfered with. Pneumothorax or thoracoplasty cases cannot produce the usual high velocity jet of air to clear the bronchial tree of secretion. Bronchial peristalsis accordingly becomes of much greater significance and value. No case of this type should be given a clean bill without an examination of the gastric contents.

To date, we have examined a total of 287 patients at both the Metropolitan and the Sea View Hospital, excluding 14 cases with no demonstrable pulmonary pathologic condition, 11 nontuberculous cases and 3 positive sputum cases, all of which were used as controls; the remaining 259 cases yielded on gastric examination 55 positive results, a percentage of approximately 20. When one considers that all these cases were repeatedly sputum negative both on plain smear and on concentration, one can realize the importance of the observations. A deeper analysis of the figures still further raises the significance of the results. The cases studied at the Sea View Hospital included a large number of postoperative sputum negative thoracoplasty cases. These yielded negative gastric results. At the Metropolitan Hospital, the gastric examinations were done solely as a diagnostic aid and in this group the positive results totaled 30 per cent. Since completing this study, we have been fortunate in finding a similar line of investigation by two Spanish workers, Eizaguirre and Uralde,[6] who report nine positive gastric examinations out of twenty-one negative sputum cases—a percentage of 42.8. This percentage of positive results is rather high when compared with our series. We believe it is due to the comparatively small number of cases investigated. The degree of success in our Metropolitan Hospital series, in which 30 per cent yielded positive results, we believe to be a fair index of the value of the gastric examinations. Mere numbers, however, can never duplicate the startling shock that one gets when a single gastric examination shows the presence of tubercle bacilli after repeated sputum examinations during the course of a year have always been negative—an occurrence that has presented itself to us several times. As a result of our investigation, we believe that this diagnostic aid is sufficiently valuable to warrant its routine use in all suspected cases in which the sputum is negative.

### SUMMARY

A search was made of the gastric contents for tubercle bacilli in pulmonary tuberculosis. The mechanism of bronchial peristalsis is demonstrated whereby bronchial contents are raised to the level of the larynx without the mechanism of cough. The importance of this mechanism in raising sputum from the lungs is amply shown by the fact that, in a series of 287 cases in which there were repeated negative sputum examinations, approximately 20 per cent yielded tubercle bacilli on examination of the gastric contents. In some of these positive cases there was no previous coughing and expectoration. The importance of this method of investigation becomes increasingly significant when the normal cough mechanism has been interfered with as, for example, in pneumothorax or thoracoplasty cases. The simplicity of the examination, which consists merely in the usual concentration technic on the aspirated gastric contents, makes the examination so easy as to warrant its routine use in all suspected sputum negative cases.

75 Central Park West—115 Central Park West.

6. Eizaguirre, E., and Uralde, F. L.: Investigation of Koch Bacilli in the Gastric Contents in Pulmonary Tuberculosis, Rev. espan. de tuberc. **2**: 327, 1931.

**The Oxygen in High Altitudes.**—Argyll Campbell found that acclimatized animals could live at a tension of oxygen in the inspired air of 53 mm. Hg, but degeneration of the heart and other organs resulted on prolonged exposure to this tension, which corresponds to that at the top of Mount Everest.—Hill, Leonard: Altitudes to be Reached When Breathing, *Quart. J. Exper. Physiol.* **23**:45 (Aug. 10) 1933.

# STUDIES OF THE VISUAL FIELDS IN FUNCTIONAL HEADACHES OF PITUITARY ORIGIN

BEULAH CUSHMAN, M.D.
CHICAGO

While a study was being made of headaches which had been treated in the past six years with the roentgen rays and glandular extracts, the similarities of the visual field were strikingly alike and seemed of enough importance to report. Headache as a symptom is probably the most common complaint which brings the patient to the ophthalmologist. In a few cases in which correction of the refractive error did not relieve the cephalalgia, a study made with the aid of the internist, the roentgenologist and visual fields led to the belief that these headaches are of pituitary origin.

Pituitary headaches as described by Engelbach and Tierney [1] is a term "not to be used to apply to the type of headache caused by neoplasms of the pituitary or other brain tumors." It has been established by these authors that the pituitary gland, almost equally with the thyroid, is concerned in the initiation and maintenance of the functions of sex glands, particularly in the female. The added demands on the pituitary gland during the periods of adolescence, pregnancy and menopause cause temporary hyperemia and enlargement of it, with a consequent compressure of the gland within its close fitting capsule and sella turcica.

Cushing [2] has attributed the pituitary headaches to the distention of the capsule, and in his book on "The Pituitary Body and Its Disorders" describes two cases (XXVI and XXXVI) in which the subjective symptoms were immediately relieved by splitting the tense capsule of the moderately enlarged gland.

Zentmayer [3] in 1917 stated that there are few cases of any abnormal state of activity of the pituitary involving either one or both lobes which did not have some ocular symptoms. The ocular disturbances are manifested by headaches and tiring of the eyes on near use, or headache after minimum fatigue.

Tilney and Riley [4] described the hypophysis cerebri, which varies in weight from 3.5 to 4.5 Gm. and consists of two portions, the anterior and the posterior lobe. The gland is derived from an epithelial pouch which buds off from the roof of the buccopharyngeal cavity; this process meets and partly envelops a corresponding prolongation (infundibular) from the adjoining base of the anterior cerebral vesicle.

This combined neuro-epithelial structure becomes enveloped in an adherent dural capsule and occupies the sella turcica. The dural capsule in man has an upper diaphragm which stretches from the four clinoid processes and is perforated for the passage of the infundibular stalk. It is capable of distention upward under the diaphragm and laterally toward the cavernous sinuses, but any considerable enlargement anteroposteriorly can take place only with deformation of the bony sella itself. Under certain conditions of stasis or glandular involution, the secretory products may become encysted, inspissated and insoluble, just as in the case of involutional colloid transformation which Marine has described for the thyroid acini.

Professor Schaeffer,[5] in a study of 125 anatomic cases, reported that in 96 per cent the optic chiasm was located either wholly or partly over the diaphragm of the sella and underlying hypophysis; in 79 per cent of the instances the anterior and often the greater part of the chiasm had the diaphragm-hypophyseal relation, the dorsal and lesser part projecting variously over and behind the dorsum sellae; in 12 per cent the entire chiasm rested over the diaphragm and subjacent hypophysis; in 5 per cent the dorsal part of the chiasm rested on the diaphragm, the anterior part resting in the chiasmatic sulcus; in 4 per cent of the bodies the entire optic chiasm was located behind the diaphragm of the sella, resting on the dorsum sellae, and projecting behind it.

Erdheim and Stumme [6] have demonstrated the enlargement of the hypophysis in pregnant women, by a control autopsy report of those who died during pregnancy. They showed that the average weight of the pituitary gland was from 6.18 to 7.5 Gm.; after the first pregnancy it was 8.47 Gm., and in the multiparous, its average weight was 10.6 Gm., the maximum weight being 16.5 Gm.

Definite physiologic functions have been attributed to the hypophysis from studies made on dogs after partial and complete hypophysectomies and correlation of the symptoms and pathology after removal of tumors in man. The function of the anterior lobe seems to regulate the development of the osseous growth and of the sexual characteristics and to aid in the maintenance of the general metabolic condition.

The secretions of the posterior portion or infundibular process influence carbohydrate metabolism, the urinary output and, to some extent, the general disposition.

These hormonic signs vary according to the time of appearance, before or after adolescence, and the symptoms may be classified as due to a hypofunction or a hyperfunction of either lobe or involvement of the whole gland.

It is well known that pregnancy and the menopause are coincident with the onset of many pituitary disturbances and that these changes are included as etiologic factors in diseases of this gland. Typical periodic attacks of pituitary headaches frequently have their onset during the development of menstruation, pregnancy or the menopause.

Pardee [7] stated that ". . . there can occur a disproportion between the pituitary body and the sella with the production of pressure on the sensory nerves to the dura; and by its encroachment on the cavernous sinuses it may cause interference with the cerebral circulation, the whole setting up the train of pituitary symptoms, including the headache."

The familiar syndrome of pituitary tumor, consisting of headaches, somnolence, mental dulness, polyuria, increased sugar tolerance, glycosuria, oculomotor palsies, bitemporal hemianopia, evidence of disturbed bony metabolism, adiposity and sexual regression, is usually recognized. The functional headache, which Gower describes as one that does not prevent sleep, is often left to the patient to tolerate as best he can.

Read before the Section on Ophthalmology at the Eighty-Fourth Annual Session of the American Medical Association, Milwaukee, June 15, 1933.

1. Engelbach, William, and Tierney, J. P. L., in Tice, Frederick: Practice of Medicine, Hagerstown, Md., W. F. Prior Company, Inc., 1921, vol. 8.
2. Cushing, Harvey: The Pituitary Body and Its Disorders, Philadelphia, J. B. Lippincott Company, 1912.
3. Zentmayer, William: The Eye and the Endocrine Organs, J. A. M. A. **69**: 1 (July 7) 1917.
4. Tilney, F., and Riley, H. A.: Anatomy of the Nervous System, ed. 3, New York, Paul B. Hoeber, Inc., 1923.
5. Schaeffer, J. Parsons, quoted by de Schweinitz (footnote 8).
6. Erdheim and Stumme: Ueber der Schwangerschaftsveraenderung der Hypophyse, Beitr. z. path. Anat. u. z. allg. Path. **46**: 233, 1909.
7. Pardee, Irving H.: Pituitary Headaches and Their Cure, Arch. Int. Med. **23**: 174 (Feb.) 1919.

Such functional headaches were the ones chosen for study six years ago, and the roentgenograms demonstrated the four types of sella as described by Pardee: (1) the normal, (2) the contracted, (3) the closed, in which the clinoid processes are in apposition, and (4) those in which there is erosion of the anterior or posterior clinoid processes. Too much emphasis cannot be placed on the type of sella, but a roentgenogram is of great benefit in ruling out a pituitary tumor and also as a matter of record in the future study of this condition, as no doubt tumors may develop in some of the cases.

De Schweinitz [8] has described the headache caused by tumors of the hypophysis; the pain may be: (1) occipital and radiating, with or without nausea and vomiting, (2) parietal, radiating to the top of the skull, (3) primarily frontal and later bitemporal, increased on tipping the head sideways, (4) bitemporal to intratemporal, and (5) unilateral and temporal, simulating migraine. The same types of pain were found in the headaches of this series of cases, and the pain had persisted for many years in varying intensity. The character of the pain was boring, and the pain was continuous for from a few minutes to forty-eight hours or longer; it frequently was present on awakening in the morning, and usually increased with the use of the eyes for any near work. The cephalalgia was often associated with varying degrees of mental confusion and lack of power to concentrate, and in one case use of the eyes for near work had been impossible without great pain for twenty years. In the female patients in whom it was most often found, the same type of pain frequently occurred during the three or four days before menstruation or at a time of physical exhaustion. The severity of the cephalalgia and associated ocular symptoms seems proportionate to the dysfunction.

Dysfunctions of the pituitary gland often follow severe acute infections (typhoid fever), and such symptoms as headache and obesity may have their onset at such a time.

In simple glandular dysfunctions the headache and ocular discomfort were often the only symptoms complained of, yet, on physical examination, hyposecretion of the anterior lobe with anatomic findings were evident. The changes may be divided into those found in the preadolescent and those in the postadolescent stage. The osseous growth in the preadolescent stage is retarded, and the patient may be short or may have a small head, feet and hands with tapering fingers. The muscular development is proportional. The gonads are infantile, and in female patients amenorrhea or dysmenorrhea may be present. The secondary sex characteristics may be absent, mentality retarded, the temperature subnormal, the pulse slow and the blood pressure somewhat lower than normal. According to Engelbach and Tierney [1] the contracted or closed sella turcica is a rather constant sign in the preadolescent type of hypopituitarism.

In postadolescent hypofunction of the anterior lobe, the stature may be normal or tall, the gonads are normal, and the secondary sexual characteristics are present, but there may be a tendency toward impotency with the more advanced dysfunction. The muscular development is normal, but there is an increased fatigability. There is an average mental ability. The temperature is subnormal, the pulse slow, and the blood pressure low or normal.

8. de Schweinitz, G. E.: Tr. Ophth. Soc. U. Kingdom **43:** 12, 1923.

Deficiencies of the posterior lobe may be recognized by the history of rather sudden and rapid gain in weight, the presence of classic girdle and mons adiposity, increased sugar tolerance, polyuria and intestinal atony. There are a slow pulse, subnormal temperature and general apathy.

Physical signs indicating hypothyroidism and insufficiency of the suprarenal glands are often associated findings in the hypofunction of either lobe or the whole gland.

Hyperpituitarism involving either lobe is often associated with severe headaches. It is not such a common condition, and no cases were found in this series. The associated symptoms are singularly spectacular; those of the anterior lobe in the more extreme form may be gigantism or acromegaly, and those of the infundibular process (posterior lobe), diabetes insipidus, pituitary polyuria and glycosuria.

Cushing [2] has pointed out that many of the earlier cases of hypersecretions of either lobe may be followed by hypofunction, and that this is to be expected in those functional glandular conditions which have become arrested.

The visual fields in the cases studied seem to fit into the first of the eight stages described by Cushing and Walker [9] for tumors of the brain. There was a superior temporal quadrant defect in the red field, and the form fields were within normal limits in eight of ten cases. Four relative central and four relative peripheral scotomas were present, and it is interesting to note that all but two of the scotomas were found in the cases with normal sellae.

De Schweinitz [8] stated that, according to anatomic studies, in tumors of the hypophysis traction on the infundibulum or direct pressure from an enlarged pituitary on the chiasm does not account for all the ocular manifestations. No one has demonstrated that there is a passage of toxins from perihypophyseal spaces to the subdural space immediately over the hypophysis and from there to the chiasmatic cisterna. Traquair [10] indicated an acuteness of pressure rather than its site as the cause of some of the changes, and he expressed the belief that central scotomas depend on the impaired vascular supply of the macular bundles. Fuchs [11] stated that the scotomas may be due to a toxic influence, either derived from a perverted secretion of the gland or distilled from an inflammatory edema surrounding the tumor.

Peter [12] presented the visual fields of a patient who in 1910 showed a bitemporal hemianopia for form and colors, and who recovered completely in twenty months under treatment with thyroid and pituitary extract. A year later there was a relapse, and altitudinal hemianopia appeared. With the same glandular therapy, recovery was complete in eight months, and the patient remained normal to the time of publication in 1923.

Finlay [13] and Lancaster and Carvill,[14] in different reports, stated that during the last four to six weeks of pregnancy the large majority of women showed bitemporal field contractions, which disappeared quite rapidly

9. Cushing, Harvey, and Walker, Clifford B.: Distortions of the Visual Field in Cases of Brain Tumor, Brain **37:** 341, 1915.
10. Traquair, H. M.: Bitemporal Hemianopia: The Later States and the Special Features of the Scotoma, Brit. J. Ophth. **1:** 216, 1917.
11. Fuchs, E.: Ocular Manifestations of Internal Secretion, Arch. Ophth. **51:** 307, 1922.
12. Peter, L.: Principles and Practice of Perimetry, Philadelphia, Lea & Febiger, 1923, p. 200.
13. Finlay, C. E.: Bitemporal Contractions of Visual Fields in Pregnancy, Internat. Cong. Ophth. **1:** 144 1922.
14. Lancaster, W. B., and Carvill, Maude, in discussion on Finlay (footnote 13).

after pregnancy. Finlay, in his conclusions, stated that owing to the normal hypertrophy of the pituitary gland a compression of the chiasm manifests itself by changes in the visual fields which vary in degree according to the amount of compression suffered and the anatomic peculiarities.

Traquair [15] has stated that the changes in the visual fields found during the late months of pregnancy are probably of psychic origin. But the constant changes in the visual fields during pregnancy and of those found in this series, along with headache and other symptoms of pituitary dysfunction, seem to eliminate the psychic factor. In view of these findings, there must be some common organic etiologic factor.

All findings point directly to the pituitary gland as the common factor. The cases apparently fall into three groups: first, those with symptoms due to simple distention of the capsule during the physiologic hypertrophy; second, those with symptoms due to dysfunction, and third, those with combined symptoms of distention in a small sella and dysfunction of the hypophysis.

Treatment of all the patients was carried out by the internist (table). Two patients (cases 1 and 4) responded immediately and favorably to the roentgen treatments, and it has not been found necessary to give pituitary products. The patients in cases 2, 3, 5 and 6 were given an anterior lobe pituitary preparation or whole gland for short periods, and to the time of writing have had no recurrences of the severe periodic attacks. The patient in case 10 has never been able to cooperate fully owing to her financial condition, but she did improve with general hygienic procedures, such as rest and a high vitamin diet plus cod liver oil. In case 7 the headaches were slightly less severe, but the frequency of the attacks remained the same under treatment. The patient in case 8 must take the anterior lobe pituitary preparation continuously to be free from headaches. There has been no recent report from the patient in case 9.

15. Traquair, M.: Visual Fields and Changes in Pregnancy, Brit. J. Ophth. **11**: 271, 1927.

The visual fields in cases 1, 2, 5, 8 and 9, which were made after treatment was instituted, showed definite widening of the color fields in the contracted quadrants. In case 4 there was no change in the slight temporal contraction after roentgen treatment.

In cases 3, 6, 7 and 10 second studies of the visual fields were not made. One patient (case 3), who lives in California, found it necessary to take the anterior lobe pituitary preparation for one year, and since that time has been free from headaches. The patient in case 6 received roentgen treatment and took the pituitary extract for one month; she has remained free since then. Cases 7 and 10 have not been followed.

The technic of the roentgen treatments as outlined by Dr. M. J. Hubeny, who gave the roentgen therapy in this series, is as follows:

"The first dose is given over the right temple through a portal six centimeters square with the following factors: Skin focal distance 15 inches, peak kilovolts 115, milliamperage 5, filtration 4 mm. aluminum, time 8 minutes, which is equivalent to 13.2 r per minute or a total of 105.6 r in which the threshold erythema is calculated at 400 r.

"If headache is not produced or accentuated then the opposite temple can be treated in about four or five days with all factors being the same except the portal of entry is increased to 10 centimeters square and the skin focal distance reduced to 12 inches. This will give a dose equivalent to 20.6 r per minute or a total dose of 164.8 r. Two weeks later two treatments are again administered, one over the right temple and one over the left temple, with four or five days separating the two treatments.

"The two areas constitute one course and usually six to eight such courses are given, at all times cooperating with the referring physician, who very frequently is an ophthalmologist.

"Note: The r as used in the above formula designates the dose on the skin surface.

"The above method has proven most satisfactory, although it need not be adhered to as a finality, because of the paucity of cases. It has been found that some cases are less tolerant than others even though the dosage is relatively small."

*Summary of Cases*

| Case | Sex | Age | Headache | Sella | Visual Acuity | Contraction of Fields |
|---|---|---|---|---|---|---|
| 1 | F | 37 | Diffuse<br>10-15 years | Normal | R. + 50 w + 25 ax 90 = 1.0<br>L. + 50 w + 25 ax 90 = 1.0 | R. and L. superior temporal for red<br>R. inferior and temporal for form<br>Relative peripheral and central scotomas for red |
| 2 | F | 23 | Diffuse | Normal | R. — 75 = 1.5<br>L. — 75 = 1.5 | R. and L. superior temporal for red<br>Normal form<br>L. relative central scotoma for blue |
| 3 | F | 33 | Frontal<br>15 years | Normal | R. + 75 ax 90 = 1.2<br>L. + 75 ax 90 = 1.2 | R. and L. superior temporal for red<br>Normal form<br>R. relative peripheral scotoma for red and central relative scotoma for green |
| 4 | F | 26 | Bitemporal | Enlarged | R. — 1.50 w — 50 ax 90 = 1.5<br>L. — 2.25 w — 25 ax 90 = 1.5 | R. and L. superior and inferior for color<br>General for form |
| 5 | M | 39 | Frontal<br>4 years | Normal | R. V. 1.0<br>L. V. 1.2 | R. and L. superior temporal for red<br>L. relative central scotoma for red<br>R. inferior temporal and superior for form |
| 6 | F | 38 | Occipital<br>9 months | Closed<br>(7 by 7) | R. + 75 = 1.2<br>L. + 75 ax 30 = 1.2 | R. and L. superior temporal for red<br>R. and L. general contraction for form<br>Relative central scotomas for green |
| 7 | F | 41 | Frontal<br>18 years | Closed<br>(4 by 8) | R. + 75 w + 25 ax 180,<br>1.0 △ B D = 1.0<br>L. + 75 w + 25 ax 180,<br>5 △ B U = 1.0 | General contraction for red |
| 8 | F | 40 | Frontal and bitemporal<br>20 years | ..... | R. + 1.00 w + 1.50 ax 100 = 1.2<br>L. + 75 w + 1.50 ax 90 = 1.2 | R. and L. superior temporal for red<br>R. and L. superior for form |
| 9 | F | 29 | Diffuse<br>24 years | Contracted | R. + 1.25 w + 50 ax 90 = 1.5<br>L. + 1.25 w + 50 ax 90 = 1.5 | R. and L. superior temporal for red<br>Inferior and temporal for form<br>Relative peripheral scotomas for red |
| 10 | F | 18 | Diffuse | ..... | R. + 50 w + 50 ax 105 = 1.2<br>L. + 50 w + 50 ax 90 = 1.2 | R. and L. superior temporal for red<br>R. and L. superior for form |

## SUMMARY

1. Certain periodic attacks of headaches and discomfort of the eyes simulating ciliary spasm may be due to dysfunction of the organically sound pituitary gland

or to distention of its capsule by physiologic hypertrophy.

2. The majority of the visual fields show a contraction of the superior temporal quadrant for color and varying changes in the form fields.

## CONCLUSIONS

1. Studies of the visual fields made in cases with a history of periodic headaches and ocular discomfort, in which there is no improvement with the correction of the refractive error, may aid in diagnosis.

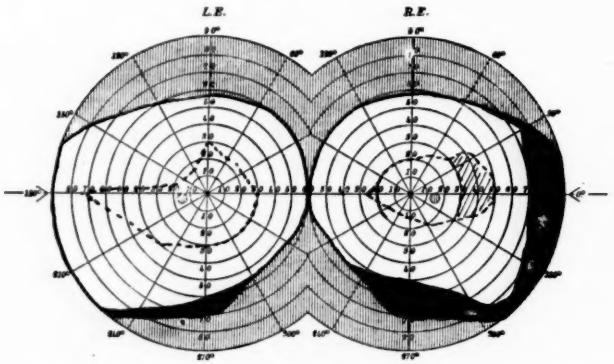



Fig. 1 (case 1).—Visual fields taken on Aug. 2, 1927. Vision in the left eye was 1.0; that in the right eye, 1.0 —2.

2. The aid of the internist and the roentgenologist should be sought in the study of the activity of the pituitary gland and the condition of the sella.

## REPORT OF CASES

CASE 1.—Mrs. B. S., a physician, 37 years of age, was first seen in September, 1927, when she complained of generalized periodic headaches which had been present for from ten to fifteen years and had gradually increased in severity. The headaches were always more severe a day or so before menstruation. Four weeks previously the most intense headache that she had ever experienced, of six hours' duration, was

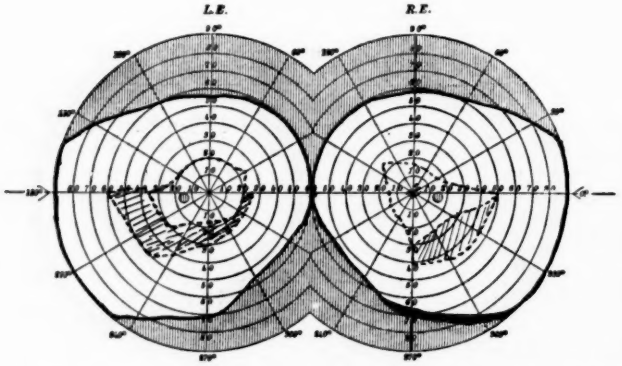



Fig. 2 (case 2).—Visual fields taken on Nov. 9, 1928. Vision in the left eye was 1.5 —3; that in the right eye, 1.5 —2.

followed by a right facial paralysis. The paralysis had gradually improved, but the early morning headaches persisted. Mental confusion was often present with the severe headaches.

General examination gave negative results. The pupils and fundi were normal, and there was no muscular imbalance.

The roentgen picture of the sella showed no distortion. There were a definite slanting off of the right and left superior temporal quadrant for color and a temporal defect in the right form field; a peripheral and central relative scotoma for red was found in each eye.

Unilateral roentgen treatment was given, but was followed by a severe headache which lasted for almost twelve hours. The patient did not return for treatment of the opposite side. Her severe headaches did not return, and the fields taken one month later demonstrated that there were a widening of the color fields and loss of the relative central scotoma. The fields taken again in 1930 had expanded outlines for form and loss of all scotoma. The patient reported that she had continued to be greatly improved, only occasionally having pain, though mild, which sometimes lasted thirty minutes. Again in October, 1932, she stated that she had been entirely free from headache.

CASE 2.—Miss R. C., a librarian, aged 23, consulted me in November, 1928, because of a dull diffuse pain throughout the head, associated with a sharp pain through the eyes every time she tried to read. Polyuria had been present the past month. Premenstrual headaches and dysmenorrhea had always been present.

General examination showed the height to be 5 feet 4 inches, and the weight 110 pounds (49.9 Kg.). She had a small head and hands, with long tapering fingers.

Ocular examination showed that corrected vision in the right eye was —75 = 1.5 —2; that in the left eye was —50 = 1.5 —3. There was no muscular imbalance; the disks and fundi were normal. There were a slanting off in the superior temporal and inferior nasal quadrants for red, a peripheral relative scotoma for red in both eyes and a slight increase in the size of the blind spots.

The roentgenogram of the sella showed nothing abnormal.

Roentgen treatments were given, and the headaches improved immediately. This treatment was followed by glandular medication, given by Dr. MacDonald.

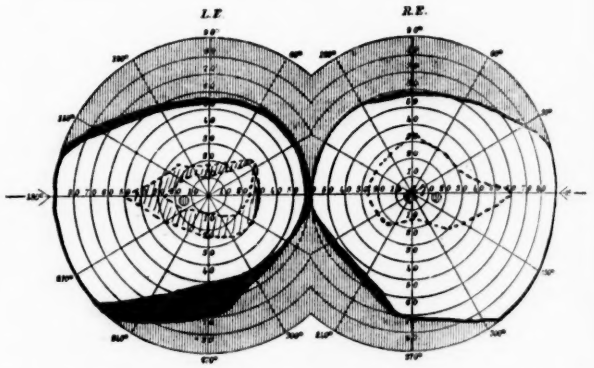



Fig. 3 (case 3).—Visual fields taken on Dec. 12, 1928. Vision in the left and the right eye was 1.5 —3.

In October, 1932, the patient reported that she had had no more headaches, that she was married in 1931, and that a normal child was born in August, 1932.

CASE 3.—Mrs. G. S., a telephone operator, aged 33, the mother of four normal children, was seen in December, 1928, complaining of premenstrual frontal headaches which had been present for the past fifteen years. They gradually became more frequent until they were almost constant. The pain increased in severity with the use of the eyes for any near work. She had always been strong and able to care for her four children, and she worked for the telephone company until the previous year, when she began to suffer from severe fatigue after simple work. A headache seemed to be precipitated by fatigue. She was extremely irritable. Hysterectomy had been performed seven years previously for fibroids.

General examination, made by Dr. MacDonald, gave negative results. The height was 5 feet 3 inches, the weight, 159 pounds (72.1 Kg.). The blood pressure was 120 systolic and 80 diastolic. The metabolism was zero.

The refractive error of +75 axis 90 in each eye was the same as the patient was wearing, and there was no muscular imbalance. The pupils and fundi were normal.

The visual fields showed a slanting off of the superior temporal quadrants for color, and there was no constriction of the form fields. There was a relative central scotoma for one-half degree green.

The roentgenogram of the sella showed nothing abnormal (8 by 13 mm.).

The patient reported improvement after the roentgen picture was made and with the administration of an anterior lobe pituitary preparation, given by the internist, for one year. She was free from headache during the treatment, and has remained so since then.

CASE 4.—Miss I. M., a medical student, 26 years of age, was first seen in October, 1930, when she complained of severe bitemporal headaches which had been present on awakening the previous three weeks, and were usually worse on the left side. They were similar to the severe headache which came on four or five days before menstruation, and which had been present since the onset of the menses. The headaches were different from periodic migraine, which had come on at irregular intervals since the age of 10. The present headaches were associated with somnolence and mental retardation. Polyuria occurred during and immediately following an attack. During the headaches the patient was unable to use her eyes for any continued near work.

General examination gave negative results. There was an increase in pigmentation of the skin around the angles of the jaws, and the skin was somewhat thickened and dry. There was an increase in the amount of hair about the temples and between the eyebrows. There was a moderate nerve deafness, probably of otosclerotic origin.

The compound myopic astigmatism had been properly corrected; the pupils and fundi were normal, and there was no muscular imbalance. There was a slight right superior

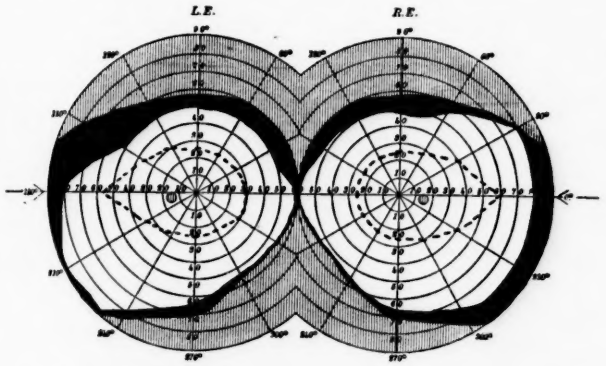



Fig. 4 (case 4).—Visual fields taken on Oct. 30, 1930. Vision in the left and the right eye was 1.5.

temporal contraction of the form fields, but the field for red was well within normal limits.

Roentgen examination of the sella showed rudimentary clinoids and dorsum, indicating enlargement.

Dr. Percival Bailey stated that there was no tumor, and that roentgen treatments were not contraindicated. The first roentgen treatment was given on October 27. Four days later the patient reported that the headache disappeared one hour after the treatment, and that she had felt much better and was more alert. The contraction of the form fields had disappeared, whereas the red fields remained the same. On Oct. 16, 1932, she reported that there had been no recurrence of severe headaches, although there was a mild diffuse pain usually present for from four to five days before the menses.

Roentgen examination made in October, 1932, showed no change in the sella.

CASE 5.—Mr. C. Y., an engineer, aged 39, was seen in January, 1929; he complained of frontal headaches, which radiated to the right temporal region. The headaches began four years previously, and at the time of examination were almost constant. Blurred vision and double vision were present at times, especially during the headache. He could usually anticipate the headache by his thirst. He passed large quantities of urine during and after the attack. Mental confusion was always present with the more severe headaches.

General examination revealed girdle and mons adiposity and small hands, with long tapering fingers; otherwise, the findings were negative.

Ocular examination showed that uncorrected vision in the right eye was 1.0; that in the left eye was 1.2. There was cover divergence, but the esophoric power was normal. The pupils and fundi were normal. The disks showed slight temporal pallor, but within normal limits. There were a general contraction of the right form field, more marked in the inferior quadrant, a slanting off of the superior temporal quadrant and a general contraction for color.

A roentgenogram showed that the sella was normal.

Whole pituitary extract was given, and the headaches were greatly lessened in severity and frequency. Seven months later the visual fields were normal for form, and the left color field was normal, the right field remaining slightly contracted.

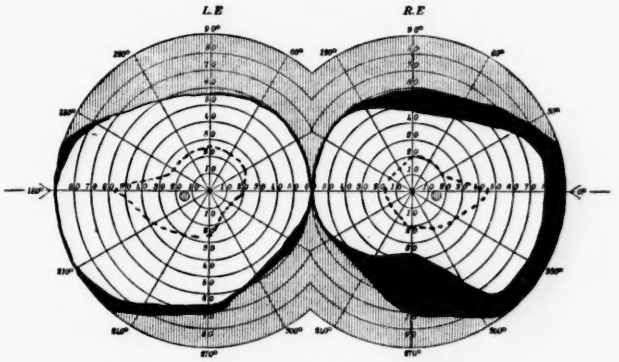



Fig. 5 (case 5).—Visual fields taken on Jan. 1, 1929. Vision in the left eye was 1.2; that in the right eye, 1.0.

In January, 1933, the patient's wife reported that he remained almost entirely free from headaches.

CASE 6.—Mrs. F. K., a housewife, aged 38, was seen in May, 1927, complaining of attacks of occipital headaches from two to three times a week for the past nine months; they increased in severity with the use of the eyes for near work. The pain in the head had become so severe that she could not sleep. She had all the upper teeth extracted in January as the only source of questionable infection; there had been no change in the headaches.

Dr. Hardon reported that the general examination gave negative findings.

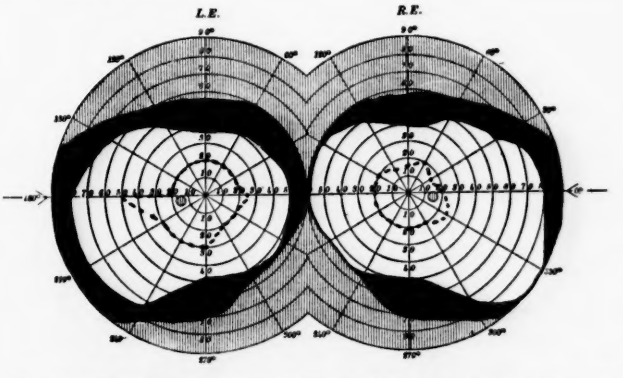



Fig. 6 (case 6).—Visual fields taken on May 26, 1927. Vision in the left and the right eye was 1.2×.

A roentgenogram of the sella showed nothing abnormal.

Ocular examination showed: vision in the right eye, $+75 = 1.2$; that in the left eye, $+75$ axis $30 = 1.2$. There was suggestive pallor of the temporal half of the left disk. The vessels were of normal size. The pupils and fundi were normal. There was contraction of the red fields with a slanting off of the superior temporal quadrant and a moderate general concentric contraction for form.

Glandular and roentgen treatments were given, and the patient reported in February, 1933, that the headaches had not returned.

CASE 7.—Mrs. A. S., a housewife, aged 41, the mother of eight normal living children, consulted me in November, 1925,

complaining of severe frontal headaches, which became deep and boring, and were present on awakening in the morning. They had been present for the past eighteen years, with slight improvement at times. Fatigue always precipitated a headache. There had been no definite relation to periods of improvement noted in reference to the pregnancies. The vision was blurred, and nausea and vomiting occurred with the most severe headaches.

General examination showed that the weight was 150 pounds (68 Kg.); the height was 5 feet 2 inches. The blood pressure

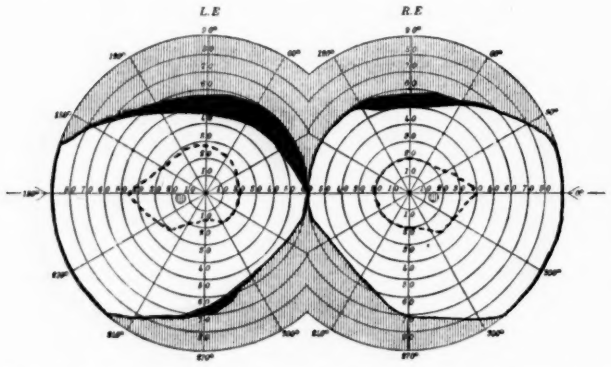



Fig. 7 (case 7).—Visual fields taken on Feb. 4, 1929. Vision in the left and the right eye was 1.0.

was 136 systolic and 74 diastolic. The pulse rate was 76. There was a girdle adiposity; the hands and head were small. The Wassermann color process and Kahn test were negative.

Ocular examination showed:

Right eye: + 75 w 25 ax 180 1.0△ B.D. = 1.0.
Left eye: + 75 w 25 ax 180 0.5△ B.U. = 1.0.

The disks showed marked venous pulsation. In the periphery of the fundi there were fine diffuse pigmentary changes. There was slight general contraction of the color fields.

A roentgenogram revealed a contracted sella and proliferative osteitis of the frontal, parietal and temporal bones.

Glandular treatments were taken irregularly, with only a slight change in the frequency of the headaches.

In April, 1932, ocular examination was repeated, and a change was made for presbyopia only. The headaches were slightly less severe, but occurred every week.

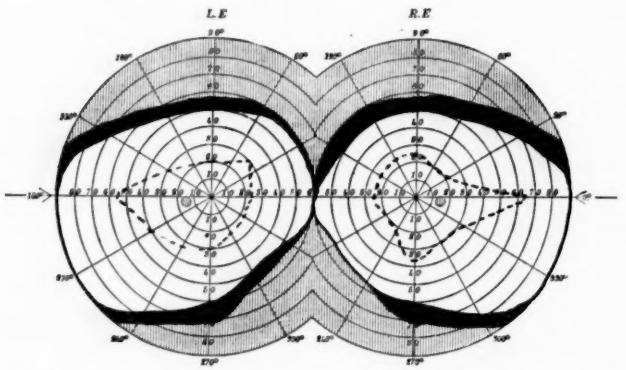



Fig. 8 (case 8).—Visual fields taken on June 14, 1929. Vision in the left eye was 1.2 —2; that in the right eye, 1.2.

CASE 8.—Mrs. H. A. B., a housewife, aged 40, was seen in June, 1929, complaining of suboccipital and frontal headaches, which were usually present when she awakened in the morning. She had been unable to use the eyes for near work for any length of time during the past twenty years, as a headache or ocular discomfort would be induced. The headaches began at the age of 5 years; the longest intermission had been one month, and the most prolonged attack lasted for four days. The headaches were always increased preceding and during menstruation. The menses began at the age of 15 and had always been regular. Dysmenorrhea had been present before the birth of a normal child six years previously, but there had been none since that time. No nausea or vomiting had ever been present.

General examination was made by Dr. MacDonald. The height was 5 feet, 3 inches; the weight, 106 pounds (48.1 Kg.). The blood pressure was 130 systolic and 80 diastolic. The white count was 10,000, with 7 per cent eosinophilia. Some myocardial changes were present on the basis of an old rheumatic heart. There was an infantile uterus.

Ocular examination of corrected vision showed:

Right eye: + 1.00 w + 1.50 ax 100 = 1.2.
Left eye: + 0.75 w + 1.50 ax 90 = 1.2 —2.

The fundi and disks were normal. There was no muscular imbalance. There were a slight contraction for form above and below and a slanting off of the superior temporal quadrants for red.

After the regulation of the treatments with an anterior lobe pituitary preparation, the patient gained 20 pounds (9 Kg.), and had no headaches. The eyes were comfortable for any amount of near work so long as she took the preparation twice a week.

CASE 9.—Miss F. B., an office worker, aged 29, was seen in October, 1927, at the Post-Graduate Hospital Clinic, complaining of severe diffuse headaches, which began at the age of 5 years. The pain had gradually become more severe in the previous four months, and she had not been able to work for a month. For many years the headaches were worse before and

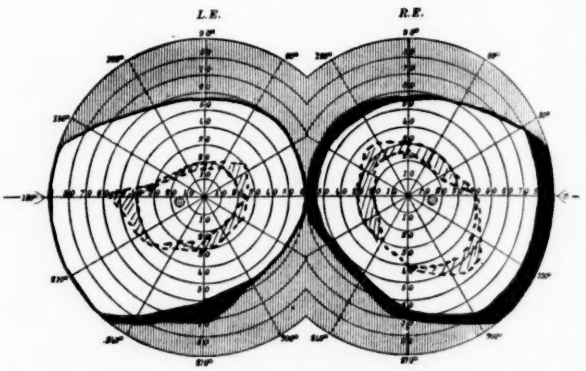



Fig. 9 (case 9).—Visual fields taken on Dec. 8, 1927. Vision in the left eye was 1.2; that in the right eye, 1.5.

after menstruation, and she felt much better during the menses. Nausea and vomiting had been present with the most severe headaches. Blurred vision and double vision frequently were present during the pain, and she was unable to use the eyes for near work.

The patient had been treated for syphilis, but negative blood and spinal fluid tests had been obtained in the clinic within the month.

The weight was 92 pounds (41.7 Kg.); the height, 5 feet, 2 inches.

General and neurologic examination, reported by Dr. Ortmayer, gave negative findings except for a right floating kidney and obstinate constipation.

Ocular examination showed:

Right eye: + 1.25 w + 50 ax 90 = 1.5.
Left eye: + 1.25 w + 50 ax 90 = 1.2.

There was dilatation of the fine capillaries of the disks. The fundi and disks were normal; there was no muscular imbalance. There were a slanting off in the superior temporal quadrants for red, peripheral relative scotomas for red in both fields and a slight temporal contraction for form in the right eye.

Contraction of the sella was shown by a roentgenogram.

The acute pain was relieved by the use of roentgen therapy, and this was followed by the use of the glandular extract. The last notation of January, 1928, was that the patient was feeling much better.

CASE 10.—Miss K. B., a school girl, aged 18, consulted me in October, 1928, because of diffuse pain in the head following

an injury one month previously during which she had hit the top of the car while riding. Severe dysmenorrhea had always been present. Allergic reaction to ragweed had been noted since 10 years of age. Pollen extracts had been given, and the condition was relieved. A deviated septum had been found on nasal examination, and a submucous resection relieved the headaches until January, 1929, when the same type of headache returned coming on with any excitement and usually present on awakening. The pain was bitemporal and worse on the

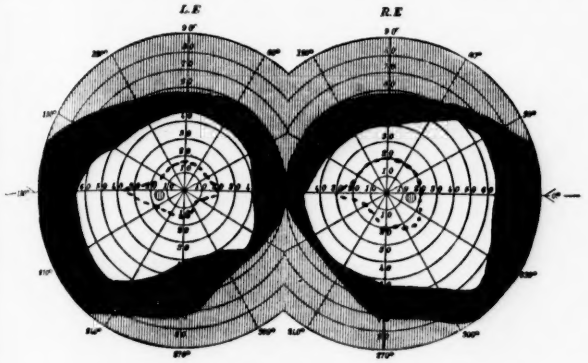



Fig. 10. (case 10).—Visual fields taken on Jan. 5, 1929. Vision in the left and the right eye was 1.2.

right side. The use of glasses did not change the character of the headaches.

General examination showed the weight to be 136 pounds (61.7 Kg.); the height was 5 feet, 4 inches. The patient had a small head and hands, with tapering fingers, and there was increased girdle adiposity.

No roentgenogram of the sella was made. The visual fields showed slight general contraction for form and red.

Ocular examination of corrected vision showed:

Right eye: + 50 w + 50 ax 105 = 1.2.
Left eye: + 50 w + 50 ax 90 = 1.2.

Glandular therapy was given, and the last report in April, 1931, was that the headaches and ocular discomfort were relieved so long as the medication was continued.

## ABSTRACT OF DISCUSSION

DR. CLIFFORD B. WALKER, Los Angeles: I will mention a few points which Dr. Cushman did not have time to bring out, referring particularly to the monograph of Dr. de Schweinitz, presented as the Bowman lecture of 1923, in which it is shown that the chiasm is not always in contact with some part of the sellar diaphragm. Indeed, in many cases the gland would have to double in size before touching the chiasm and even then the chiasm had some chance to move away because it is suspended or stretched in subarachnoid mesh and fluid. Horizontal variations as cited by Dr. Cushman further add to this vertical variation. It has no dural covering, however, as does the hypophysis, and without this protection is more quickly affected by pressure. Nevertheless, it seems clear that, of a given number of individuals having a swelling of the hypophysis sufficient to produce pain from its dural capsule and diaphragm, only a certain number, perhaps no more than 50 per cent, may be expected to have an upper temporal field defect from pressure. On the other hand, I know from examination of many hypophyseal struma or tumor patients that of those having sufficient swelling to give marked field defect the percentage having headache is not greater than 50. Evidently, much depends on the sensorium of the individual and particularly of the dura of the diaphragm and neighborhood. Apparently it is necessary to fall back on the possibilities of circulatory disturbance and secondary toxic manifestations to explain cases with no chiasmal pressure, yet with field defects. In searching for field defects in an individual having headache of the pituitary type, I wish to emphasize the value of quantitative perimetry, as illustrated by the recent careful study of a physician's daughter, aged 18 years. Consultants had studied her physical condition intensively for the cause of persistent headache during the past year. From an endocrinologic standpoint a hormone deficiency was suspected and thyroid extract had been used without improvement. Roentgen examination showed a sella perhaps a little smaller than usual yet not far from normal. Some erosion of the posterior clinoids was suspected by a few observers and field examination was carried out April 20, 1933, with the result that a definite depression for small visual angles and to some extent also the colors was apparent in the upper quadrants. The defect was predominantly bitemporal, but with a slight tendency to cross the midline and suggest homonymous possibilities. These features, however, are not at all impressive in the field taken on the perimeter with the normal or 5 mm. disk both for form and for color, but when the Bjerrum screen is used, the 1/1,000 and 1/2,000 form field show the definite patterns described, and these measurements can be checked repeatedly. Colors cannot be so satisfactorily used in reduced sizes but in half normal sizes on the perimeter offer an important confirmation or check on the screen record. Since x-rays had been used considerably for films, pituitary extract for hypopituitary secretion was given. The headaches stopped promptly. Gradually her diet was changed in the direction of reducing carbohydrates and July 22 her father reported no return of the old headaches. I hope that Dr. Cushman's work will draw more attention to this group of pituitary headaches and thereby bring relief to many sufferers.

## ACUTE UNCINARIASIS FROM MASSIVE INFESTATION AND ITS IMPLICATIONS

BAILEY K. ASHFORD, M.D.
Professor of Tropical Medicine and Hygiene, School of Tropical Medicine of the University of Puerto Rico under the auspices of Columbia University
GEORGE C. PAYNE, M.D.
AND
FLORENCE KING PAYNE, M.D.
Representing the Rockefeller Foundation in Puerto Rico
SAN JUAN, PUERTO RICO

In the year 1904 the Puerto Rico Anemia Commission wrote its report on what was the first organized campaign in the world against uncinariasis as a scourge of the agricultural laborer. This work embraced a very complete study of the clinical picture produced by the disease and insisted on what has not been emphasized in any other work on the subject; namely, the occasional occurrence of acute uncinariasis produced by sudden massive infestation. In a summary of the labors of the Puerto Rico Anemia Commission[1] is found a brief description of one of these acute cases in a Negro, a race supposed to be relatively immune. After working sixteen days at burying the feces of heavily infested patients in our field hospital in Utuado, he reported for treatment with extreme asthenia, severe gastralgia, and an unusually marked case of uncinarial dermatitis of the feet. The gastralgia had supervened on the eighth day from first exposure to infestation, and his hemoglobin registered 15 per cent. A feature of this case was intestinal hemorrhage, and only after intense and careful treatment was his life saved.

Since that time hookworm disease has become, at least in the popular fancy, a public health problem relegated to the specific attention of sanitarians; and what was, at the time we were working, a disabling and very often fatal disease has become apparently merely a routine matter for health officers to settle.

1. Ashford, B. K.; King, W. W., and Gutierrez, Pedro: Report of the Commission for the Study and Treatment of "Anemia" in Porto Rico, San Juan, Porto Rico, Bureau of Printing and Supplies, 1904, p. 112.

It is for the purpose of rearousing the medical profession to a just conception of one of the great tropical diseases, as well as to corroborate a phase of uncinariasis on which few if any comments have ever been made and further suggest that there is probably still another and more sinister aspect of what has seemed such a simple illustration of parasitic invasion, that we have decided to break a silence of twenty-five years on a subject that seems for some time to have been considered closed and completely investigated.

On August 3, 1932, Dr. Ashford was called in consultation to Caguas, a town 20 miles from San Juan, to see a patient said to be dying from intestinal hemorrhage complicating typhoid fever. The patient, a white school girl from one of the cultured families of this island, had been all her life under the professional supervision of Dr. Ashford and, in fact, had been seen by him only a short time before the excursion to be recounted and found to be in perfect and robust health. Her blood had then been examined and found normal. On the outstanding factors in the history of the case, namely, the drinking of unsterilized water outside of her home, and the development in two or three weeks of a low fever terminating in a serious intestinal hemorrhage, her physicians had rather naturally diagnosed her case as typhoid fever, in spite, however, of the absence of a positive agglutination test, which they considered delayed. But a careful and time-consuming analysis of the history, after cross-questioning the family at the consultation referred to, revealed the following facts and provoked quite another diagnosis:

It seems that the patient had gone to the home of relatives at Luquillo to join her cousins and enjoy sea baths in a little bay nearby. She arrived on the 23d of June and immediately went to the beach. The bathing party on that day consisted of five persons—herself, two cousins, 14 and 15 years of age, an aunt, and a servant. They bathed all the morning and after returning to lunch it was decided, in spite of a heavy tropical rain which was meanwhile falling to bathe again in the afternoon. But as they passed this time along the shore to the bathing place, they observed that a little stagnant stream, which in the morning was not discharging into the bay, on this afternoon was pouring into it. The torrential rain had caused it to overflow the narrow barrier of sand which had heretofore separated it from the sea.

After remaining the whole afternoon in the water, all save one of the bathers noted on emerging a severe itching. On examining themselves they discovered that, while no evidence of irritation of the skin could be found on the exposed parts, the entire trunk covered by the bathing suit was peppered by what appeared to be little bites. They spent the entire night wakeful and scratching. This itching kept up for about a week, at the end of which time they began to feel as if they had caught cold. It was as if they had a heavy obstruction of mucus in the throat which could not be dislodged, and it caused not only discomfort but varying degrees of pain on swallowing and in speaking. A physician was called, but nothing beyond a superficial irritation was noted. Within a week more, an unaccountable weariness supervened with fine fleeting pains in the epigastrium. These pains became colicky, and eventually diarrhea set in in all save one case. The stools were fermented, dark and fetid, and in two cases were loaded with blood. Of the three others, two mentioned having some blood in the stools. One stated that "there was at times a considerable amount of blood," the second that the stools were "tarry with occasional red blood." The third (patient 6), however, stated that no blood was ever seen in the stools. That there was blood in every case was later verified by microscopic or chemical examination.

On the next day, the 24th, while it was still raining, they were joined in their sea bath by patient 3, the mother of patients 2, 4 and 7, whose symptoms including itching on her emergence from the bath were identical to those of the others. She reported having noted "mahogany-colored stools" at the same time as the others found blood in their feces and, as in their cases, this color was found to be due to blood.

The seventh patient was also one of this family, a 12-year-old cousin of the first patient. She, in common with all the rest, save the first patient, had taken sea baths every day at this site from the first of June on; but it should be carefully noted that not until the 23d did the little polluted stream begin to flow into the bay in which they bathed, and that not until after this had occurred was there any itching after the bath.

The seventh patient, however, did not bathe in the sea on the 23d of June but on the 25th. While it was still raining, and the water laden with polluted earth from the banks of the stream was discharging into the sea, she resumed her baths, which she had stopped on the 19th, and continued them until the 30th. Her story is that she never felt any itching after her bath but that on the 19th of the month it rained a little, and childlike she began digging with her hands a small channel through the barrier of sand to let the water out of the stream into the bay. Although there was no itching, she shared the fate of her companions, as will appear later.

At the time of the consultation in Caguas, every one of these bathers, except two, was actually sick in bed. One of them had been already sent to a hospital in San Juan.

In view of this history, as extracted in consultation, Dr. Ashford made the diagnosis, in spite of negative fecal examinations for ova of parasites, of acute uncinariasis from massive infestation. Seeing that these cases were of extreme scientific interest, the physicians in charge of the case were requested to cooperate in getting all this group of bathers into the University Hospital of the School of Tropical Medicine. An immediate transfusion of blood was recommended for the first patient in order to get her there alive, as she was almost moribund from hemorrhage.

Once collected in the University Hospital, this group automatically divided itself into two: those in whom enough larvae had completed their cycle and reached the intestine to set up, through their bites and blood-sucking, a severe hemorrhage, and those (the remainder of the group) in whom most of the larvae had failed to complete the cycle and were still wandering in the body tissues.

In the following details it will be seen that all of the first six patients, with a few exceptions to be noted, had been (1) infested on the same day in the same place, (2) remained in the water the same length of time, (3) presumably received about the same dose of larvae, and (4) subsequently suffered from about the same symptoms developing about the same time.

With the exception of one (patient 2), all had intense itching as soon as they emerged from the afternoon bath on the 23d of June. This excepted patient devel-

oped it on the next day, as did patient 3, who, as previously stated, did not go into the infested water until the 24th. With the exception of patient 6, all were in the water the same length of time. This patient was exposed from one to one and a half hours instead of the whole afternoon. These two patients probably received a lighter infestation than the others, and their history shows it, patient 3, because she bathed on a day in which there were less larvae in the water than when the rain first came up, and patient 6 because she was in the water only about one third of the time that the others were.

A curious feature of this uncinarial dermatitis was that the bites seemed to occur practically only on the parts covered by the bathing suit. This undoubtedly was due to the fact that the infected larvae, caught between bathing suit and skin, were thus offered protection and a support to hold their position until they could penetrate. On the exposed parts they must have been usually washed away by the movement of the water before they could effect an entrance.

Only patients 6 and 7 failed to see blood in the stools, and this seems due to a small intestinal worm burden. In the rest, the blood seen in the stools was dark and had evidently come from high up in the intestine. As stated, the hemorrhage in case 1 was so severe as nearly to cost the patient her life; in case 2, while less in amount, it was nevertheless alarming. All of these patients were prostrated save patient 6, and all lost heavily in weight and became definitely pale.

Patient 7 was probably infested a little earlier than the others (June 19) by digging in the sand and paddling in the water of the sluggish stream as heretofore described; but she did not suffer from any dermatitis from which the date of infestation could be fixed. That she received a heavy infestation is clear from her hematologic record. She did have, however, the throat symptoms of the others for one day, and in three weeks she had pain in the epigastrium and profuse diarrhea, although without blood, as well as loss of weight, color and strength. This patient subsequently was found to harbor only seven ancylostomes in the intestine, but her marked leukocytosis and extravagantly high eosinophilia testify to a heavy burden of larvae in the body tissues. This case can be considered one of an almost pure larval phase of uncinariasis. It seems much more logical to conceive that the intestinal irritation resulted from some excretion into the bowel through the intestinal mucosa of toxic products of these larvae than that these seven small denizens of the intestine should have been responsible.

One of the most striking features of this group infestation was that the organism was almost exclusively one that can be considered really infrequent, if not rare, in Puerto Rico, Ancylostoma duodenale. Any necators that might present themselves on using the anthelmintics would probably have had to come from some previous infestation by the universally prevalent Necator americanus of this island. Only two of the seven presented them, and then only one or two worms of this species, probably because of some chance insignificant infestation in early childhood, which never affected the health. Whether some of the patients in whom the majority of the larvae did not succeed in reaching the intestine had had a relative tissue resistance to hookworm, developed by previous infestation, which might explain the noncompletion of the cycle must remain a matter of conjecture.

As a matter of fact, they were all apparently perfectly well before that bath on the 23d of June.

It should also be emphasized that all save patient 1, who incidentally, had by far the worst infestation, had been bathing daily in this very spot since the first of June. But only when the infested stream flowed into the bay was infestation possible, and naturally, therefore, no uncinarial dermatitis had previously developed.

All seven of these cases presented a well defined secondary anemia, with a tendency in two toward failure of the gastric element for the specific hormone needed for stimulation of the hematopoietic function. The characteristic of this anemia in the first two cases, forming group 1, was a precipitous descent to dangerously low values with a prompt rise on expulsion of the majority of the ancylostomes to a 60 to 75 per cent level. At this point, however, they stuck, having been converted into cases of group 2, the group whose symptoms were sustained by wandering larvae, and which we have elected to call the larval phase of uncinariasis, to which we can now add those of group 1, whose intestinal ancylostomes have been in the main expelled. No amount of good food, iron and liver extract would improve their blood values, which have remained at from 65 to 75 per cent for hemoglobin, and from 75 to 85 per cent for erythrocytes, with the natural slight oscillations.

These cases are unique in that the patients concerned have been most closely watched for a whole year beginning shortly after their infestation. All of them came under our vigilance in August, 1932, and thenceforth full blood counts, hemoglobin estimations by the calibrated Sahli apparatus, differential counts, and Price-Jones curves were made daily up to the middle of September. From that time to November, they were made every second or third day, and thenceforth every week or two.

The secret of what happened to these patients is found in a study of the leukocytes. First, infestation, when sufficiently massive, produces leukocytosis, and this leukocytosis is eosinophilic. In every one of these cases this occurred and on these abnormalities, with a history of ground-itch, sudden loss of strength and color, and, generally, diarrhea, the correct diagnosis should be strongly suspected, if not actually made clinically, as in this instance it was made. In these cases, in from one to two months after infestation, a high leukocytosis was found already developed. It oscillated for two or three months and then, throughout nine months, gradually sank to near or quite normal.

But if the leukocyte count is striking, the eosinophil percentage is still more so. When the patients were first examined, this percentage was found to lie all the way between 14 and 69. When most of the worms in the intestine had been expelled, the percentage rose; but this was not on account of the expulsion of the worms. There is, we believe, a more reasonable explanation: There is a growing feeling that eosinophilia is a phenomenon related to the disintegration and absorption of foreign protein. The old idea that eosinophilia in uncinariasis is due to a toxin produced by the worm can no longer be accepted in its literal sense. The eosinophilia rises when the larval mortality in the tissues rises. From now on, we must see that many more larvae, as a rule, fail to complete their cycle in the body than we used to realize. Had all the larvae that entered the skin of the barefooted *jibaro* during the campaign

of the Puerto Rico Anemia Commission finally lodged in the intestine, we would have had an expulsion in every case of many thousands on using thymol. During the long wet coffee season, hardly a day passed but that swarms of these larvae would penetrate the bare feet.

The present cases would seem to throw a completely new light on the disease which we thought we knew so well, a light which has already flooded the clinical field of ascariasis. The convulsions of young children with roundworms are not so likely due, according to the old French notion, to reflex "irritation of the motor centers" as to the direct irritation of larvae wandering in the finer membranes of the brain, as already demonstrated by Professor Koppisch of the School of Tropical Medicine of Puerto Rico and by others. This is an obscure corner of the uncinariasis problem which has for many years needed illumination.

TABLE 1.—*Blood Examinations*

| Case | Date | Hemoglobin, per Cent | Red Cells | White Cells | Eosinophils, per Cent |
|---|---|---|---|---|---|
| 1 | 8/ 3/32 | 17 | 1,256,000 | 36,200 | 14 |
| | 10/ 3/32 | 78 | 3,264,000 | 17,800 | 78 |
| | 6/28/33 | 75 | 4,260,000 | 13,400 | 10 |
| 2 | 8/23/32 | 42 | 2,240,000 | 20,400 | 55 |
| | 9/ 9/32 | 52 | 3,416,000 | 41,200 | 87 |
| | 6/21/33 | 77 | 4,700,000 | 12,950 | 33 |
| 3 | 8/17/32 | 65 | 3,808,000 | 21,600 | 36 |
| | 9/28/32 | 66 | 3,744,000 | 10,800 | 74 |
| | 6/28/33 | 74 | 4,040,000 | 9,100 | 16 |
| 4 | 8/22/32 | 70 | 4,536,000 | 78,400 | 68 |
| | 10/12/32 | 68 | 4,192,000 | 28,800 | 88 |
| | 6/21/33 | 80 | 5,100,000 | 9,600 | 30 |
| 5 | 8/24/32 | 60 | 4,552,000 | 27,000 | 51 |
| | 9/ 8/32 | 55 | 3,936,000 | 25,000 | 72 |
| | 6/21/33 | 75 | 3,850,000 | 9,600 | 11 |
| 6 | 8/31/32 | 64 | 4,256,000 | 17,400 | 33 |
| | 11/22/32 | 60 | 3,720,000 | 7,750 | 62 |
| | 6/21/33 | 76 | 4,300,000 | 7,450 | 6 |
| 7 | 9/ 2/32 | 75 | 5,400,000 | 37,200 | 69 |
| | 9/19/32 | 60 | 3,824,000 | 20,000 | 91 |
| | 6/21/33 | 76 | 4,350,000 | 10,550 | 20 |

There is reason, therefore, to believe that undeveloped larvae have been arrested in their course to the intestine or have hopelessly wandered out of the paths that lead to it. For a time it looked as though they should eventually find their way to their destination, but a careful contemplation of these cases will convince almost any one that, once such an arrest or such a deviation from the normal path occurs, the larva remains a wanderer in the tissues until it dies. Now, it is very evident that the majority die within a comparatively short time after invasion, as the blood records indicate, for at first one sees the highest leukocytosis and eosinophilia. But there is a time in the course of the disease marked by a sudden rise in the percentage of eosinophils that indicates that even the larva of Ancylostoma duodenale in the body of its host has a measured term of life, just as apparently do the infective larvæ awaiting the contact of man outside the human body, and the length of this period seems not to be very different for either; for in a general and very broad way there seems to be a definite increase in eosinophilia toward the end of the third month from the time of the original invasion of the skin. Scrutiny of the tables will, we think, bear out this suspicion. Not that there are not enough larvae left surviving to sustain an eosinophilia at a later period through their death, or, perhaps, by their activities in life, for we are not at all sure that the larvae have to die in order to produce eosinophilia and leukocytosis, but at this period may be expected the highest mortality of the undeveloped organism.

This is what we would like to refer to from now on as "the larval phase of uncinariasis." It is accompanied by loss of strength and weight, sallowness, irregular fever, and a definitely high eosinophilia and leukocytosis. As already seen, it may be quite legitimate to add diarrhea. This anemia is refractory to treatment, possibly on account of constant depression through a toxin on the synthesis of hemoglobin, and thus is the door reopened to a discussion of a hypothetic poison elaborated by the worm. Once one of us, a member of the Puerto Rico Anemia Commission, enunciated the theory that this was a hemolysin. Today he would be more inclined to suspect some such influence as that indicated here.

As stated in the writings of the Puerto Rico Anemia Commission, slight rises in temperature were often seen at the outset of uncinariasis. This is amply borne out in this series of seven cases. In the five cases of which we have record, four show distinct elevations of temperature at a time when we have every reason to suppose that the burden of the larvae in the tissues was greatest, and the other patient stated that she had fever before being seen by us, a statement also made by patient 7. Thus, only one was afebrile, and that a rather lightly infested patient. The fever is intermittent when it occurs, and there are episodes of abrupt high temperature, at times preceded by a chill. In chronic multiple infestations, fever is, of course, liable to be absent. Table 1 gives the salient points in the examination of the blood on three occasions, and in the course of each of these seven cases, one when the patient was first seen, one on the date of the highest eosinophil percentage, and one when the patient was last seen. No mention is made of leukocytes other than eosinophils, for they are proportionately reduced as the eosinophil percentage rises. The Price-Jones curve shows rare deviations in what is almost always a normal curve or one tending toward microcytosis.

The parasitologic aspect of these cases is extremely curious. In cases 1 and 2, 1,439 and 614 ancylostomes, respectively, were eliminated; in cases 3 to 7, inclusive, 64, 125, 59, 21 and 7, respectively, were expelled. In case 1 no ova were found until August 10, when 200 per gram of feces appeared on the forty-ninth day after invasion of the skin; by the 17th there were 26,500 ova per gram of feces. In all the rest, ova had naturally begun to appear in the feces. Two very striking phenomena were noted in the tedious and disgusting task of counting the worms. First, they were very small, owing to their adolescence, some indeed being very tiny, even to 1.8 mm. in length. Second, there was often a striking predominance of males, against the rule for old cases. In addition to this, the worms were very often

TABLE 2.—*Treatment and Results*

| Case | Number of Administrations of Caprokol | Number of Administrations of Carbon Tetrachloride | Worms Spontaneously Eliminated | Total Worms Eliminated | Gain in Weight Under Treatment |
|---|---|---|---|---|---|
| 1 | 4 | 4 | 64 | 1,439 | 27.75 |
| 2 | 2 | 5 | 32 | 614 | 42.5 |
| 3 | 3 | 3 | 1 | 64 | 6 |
| 4 | 3 | 3 | 9 | 125 | 36.5 |
| 5 | 1 | 2 | 8 | 59 | 23.25 |
| 6 | 1 | 2 | 0 | 21 | 4.75 (loss) |
| 7 | 1 | 2 | 0 | 7 | 5 |

filled with blood. Still another neglected phase of the parasitologic problem was the spontaneous elimination of worms, which took place with striking regularity when the patient was not under the influence of an anthelmintic, and sometimes worms were found in copula, just as Leichtenstern [2] had first discovered. Table 2 gives the number of times the anthelmintic was administered, the kind of anthelmintic, the number of worms spontaneously eliminated, the total number eliminated, and the gain in weight of the patient to the date when last seen.

### TREATMENT

The treatment has been, first, restorative, to enable the anthelmintic to be given; second, specific, which has been largely detailed; third, restorative again, to counteract the evil effect of infestation.

Under the first heading, which is exclusively for case 1, there had to be three transfusions of blood before we dared to give the anthelmintic; and when the anthelmintic was given, we were compelled to use so slow-acting and mild a laxative as the extract of cascara sagrada. In addition, in order to improve the blood values, which were dangerously low, both liver extract by 4 cc. injections daily, and 8 cc. of a 50 per cent aqueous solution of ammonium and iron citrate by mouth administered in orange juice, were given.

Under the second heading, it only remains for us to comment on the effects of caprokol (hexylresorcinol), a somewhat new and infrequent anthelmintic in uncinariasis. We consider a full dose 2 Gm., or ten capsules of 0.2 Gm., but in case 1 we did not exceed 1.4 Gm. In several of our cases on various occasions it seemed to produce nausea and even vomiting, but it appeared to cause no other deleterious effect and was certainly efficient.

Mention should be made in case 4 of the systematic use of 0.2 Gm. of medicinal gentian violet in enteric coated pills with the object of killing the larvae in the tissues. This boy had a severe bronchitis in the course of his disease, which was conceived of as possibly due to a concentration of larvae in the lungs, and for three weeks he took this dye by mouth, as so highly recommended by de Langen [3] and Faust [4] as a larval vermicide in strongyloidiasis. But the experiment absolutely failed, and the conclusion was drawn that gentian violet, at least by mouth, is a failure in the treatment of the larval phase of uncinariasis. This experiment, however, is not complete until gentian violet is used in 0.5 per cent intravenous injection.

Under the last heading, practically all we depended on was iron, either nine pills of ferrous carbonate a day, or 8 Gm. of saccharated ferrous carbonate in orange juice, as well as the basic thing to which much attention was paid, a high nitrogen diet, free from fermentable and greasy food.

### RESULTS OF TREATMENT

Five of these patients consider themselves well and cured, and two say they are well, but their appearance and weight belie their statement. As a matter of fact, we do not consider any of these patients cured. All are pale, and though the majority have gained satisfactorily in weight and their freedom from symptoms indicates a decided betterment, they still have a secondary anemia and an indication of a significant larval burden in the body tissues.

Attention is invited to the fact that full details, charts, tables, and graphics, as well as case histories of this series will be published in the December, 1933, number of the *Journal of Public Health and Tropical Medicine*, edited by the School of Tropical Medicine of Puerto Rico.

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3. De Langen, C. D.: Anguillulosis and Eosinophilia (addendum), Mededeel. v. d. dienst. d. volksgezondh. in Nederl.-Indië **18:** 310-314, 1929; Anguillulosis and the Syndrome of the "idiopathic hypereosinophilia," ibid. **17** (part 4) pp. 515-529, 1928; Anguillulosis en het ziektebeeld van de "Idiopatische Hypereosinophile" (Strongyloidosis and "Idiopathic Hypereosinophilia.") Geneesk. tijdschr. v. Nederl.-Indië **68:** 973-990, 1928; English abstr. in Trop. Dis. Bull. 26, 1929, p. 543.

4. Faust, E. C.: Gentian Violet Therapy for Strongyloides Infection, editorial, Internat. M. Digest **17:** 57, 1930; The Symptomatology, Diagnosis and Treatment of Strongyloides Infection, J. A. M. A. **98:** 2276-2277 (June 25) 1932.

## CONGENITAL MEDIAN BARS OCCURRING IN TWINS

OTTO J. WILHELMI, M.D.
Assistant Surgeon in Urology, Outpatient Clinic, Washington University School of Medicine
ST. LOUIS

The term median bar in prostatic obstruction should be applied to any obstruction involving the posterior vesical lip, unassociated elsewhere with obstruction in the prostate, bladder or posterior urethra. It was originally described in 1830 by G. J. Guthrie, who then called it a dam or bar of the prostate. Later on, Alexander Randall, after an exhaustive pathologic study of prostates, found the term "bar" to be pathologically and anatomically correct.

Median bars can be acquired or congenital in origin and they usually occur at an earlier age than do hypertrophies. But one must not be misled by this early appearance, for in a recent review of 355 cases Young found 208 median bars in men over 50 years of age.

The etiology of most bars is primarily infection of the prostate and seminal vesicles, which results in a fibrosis and contracture at the prostatic neck. This evidence would seem to indicate that the man whose prostate has been the seat of frequent infection, whether venereal or nonvenereal in origin, is a likely candidate for prostatic bar any time after the fifth decade.

There are four types of bars pathologically: (1) a sclerotic dam across the prostatic neck which forms an acute angle with the lateral walls, (2) a fibrous bar which pulls the interureteral ridge close against the vesical orifice, (3) a glandular bar and (4) Albarran's subcervical glandular hypertrophy.

The symptoms caused by median bar are quite similar to those in prostatic hypertrophy. The patients complain of nocturia and frequency, which gets progressively worse. They also complain of urgency, dysuria, hesitancy in starting, dribbling, and a decided diminution in the size of the stream. The onset is slower than in hypertrophy and it is not uncommon to hear a patient relate of his first difficulties fifteen years previous to the time he seeks advice. The condition grows worse and often an acute retention occurs.

The diagnosis is comparatively simple for one of urologic training and is based on: 1. Definite obstruction at the prostatic neck when any instrument is passed into the bladder. With the finger in the rectum, one often experiences a "jump" which the instrument takes as it enters the bladder. This is caused by the instru-

Read before the St. Louis Medical Society, May 9, 1933. The operations were performed during the meeting of the American College of Surgeons in October, 1932.

ment first blocking and later passing over the obstructing bar. 2. Residual urine, varying in amount from a few to several hundred cubic centimeters. 3. Trabeculations of the bladder wall. Caution should be exercised here and a distinction made from the neurogenic bladder, in which the picture is somewhat similar. 4. Slight lateral clefts with a "drop off or gutter" between the elevated posterior lip and the interureteral ridge.

The treatment is transurethral resection or revision. Through an instrument such as McCarthy has designed it is comparatively easy for the urologist to remove under vision sufficient tissue to assure adequate drainage with a relief of symptoms. With the recent progress in electrical appliances in this field, and with the number of machines which render the spark gap and radio tube currents, it is very rare for one who is experienced in operative resection to have operative or postoperative hemorrhages of any consequence.

I wish to emphasize here that while prostatic resection is a highly spectacular and a superficially alluring procedure, it is honeycombed with pitfalls. The resectoscope in the hands of a general surgeon is an extremely hazardous instrument, and its usage should be limited to the expert. Alcock states that one can hardly become proficient in this art until he has done fifty resections. The idea is a comparatively new one in urology and its limitations have been the subject of many heated discussions in urologic sections. That it is the method of choice in median prostatic lobes, contracted prostatic necks, median bar formations and carcinoma of the prostate, I think no one will deny. It should not be assumed for one moment that resection is an innocuous procedure and, therefore, of minor consequence.

In prostatic obstructions in which there is a residual urine the patient should undergo the same preliminary catheter drainage and renal check-up that he undergoes prior to prostatectomy. Until the blood chemistry, cardiac action and blood pressure are within safe limits, no operator should assume any more risk here than he would be willing to assume if he were doing an open operation.

Experience has taught that, in doing resections, bleeding is by far the greatest hazard. Therefore, all bleeding points after each resection should be seared off by means of the coagulating current prior to further resection. Often one can see a large vessel and it is advisable to coagulate this prior to cutting in this area. Meticulous judgment should be exercised in the selection of fulgurating units. Tube machines cut quickly but coagulate poorly, while on the other hand spark gap machines do not cut as rapidly but their coagulating power is much more secure. Other points worthy of note are to cut only under running water and not to use currents that cut too deeply. Cases in which this has not been observed result in postoperative hemorrhages and occasionally fistulas. A large retention catheter should be placed in the bladder after the operation and this should not be removed until the fifth postoperative day, when the bladder is then filled and the patient requested to urinate. He is usually capable of voiding a large and forceful stream.

## REPORT OF CASES

CASE 1.—O. N., a white man, aged 27, single, admitted to Barnes Hospital, Oct. 13, 1932, suffered from frequency, difficulty in starting the stream, and dribbling. The condition came on in 1924, when the patient noticed dribbling. This was followed by frequency and nocturia. At the time of admission, the patient was voiding from one to three times each night. He was often annoyed with pain and burning when attempting to void.

The patient had had stomach trouble for years. He had had mumps, measles and childhood diseases. He had gonorrhea in 1926. An appendectomy was performed in 1923.

The patient's parents were living and well. A twin brother also had urinary trouble.

Physical examination was grossly negative. The blood pressure was 110 systolic, 66 diastolic. There was a stricture in the bulbomembranous urethra. An F. 16 sound was admitted. There was no enlargement of the prostrate or vesicles. The sphincter tone was good.

The specific gravity of the urine was 1.017. The urine was acid and examination was negative for albumin and sugar. Microscopic examination gave negative results.

Blood examination revealed: red blood cells, 5,100,000; white blood cells, 6,408; hemoglobin, 90; nonprotein nitrogen, 30. The Kahn test was negative.

The stricture was dilated to F. 28 and a retention catheter was placed in the bladder for three days.

The cystoscope was passed after much manipulation when an obstruction was encountered at the prostatic neck. A fine and heavy type of trabeculation was seen over the lateral wall and the bladder dome. There was a gutter-like formation between the posterior prostatic lip and the interureteral ridge. A definite bar was observed just anterior to this area. There was also a finger-like tag of tissue extending from the right border of this bar. There was no enlargement of the lateral prostatic lobes. The external sphincter had good tone. There was residual urine of 240 cc.

The diagnosis was: 1. Stricture of posterior urethra. 2. Congenital median bar.

CASE 2.—O. N., a white man, aged 27, single, admitted to Barnes Hospital, Oct. 13, 1932, complained of dysuria, nocturia, and difficulty in starting the stream. The condition started in 1924 about the same time that his brother's trouble started with frequency of one and one-half hours. Once, four months before, he had been unable to void. At present he had difficulty in starting urination, with dribbling at completion of the act. During the night he urinated three or four times.

The patient had had the diseases of childhood. There was no history of gonorrhea or syphilis.

Physical examination was negative. The blood pressure was 112 systolic, 70 diastolic. The sphincter tone was good, the prostate small and soft.

An obstruction to the cystoscope was encountered at the prostatic neck. There was a residual urine of 400 cc. Fine trabeculations were present over the dome and the lateral wall. A gutter-like formation was present between the posterior lip of the prostate and Mercier's bar, identical with case 1. A definite bar was found anterior to this gutter. There was also some contracture of the bladder neck. The external sphincter was of fair tone and did not permit vision of the verumontanum on withdrawal of the cystoscope.

Both patients left the hospital six days after operation and neither one has shown residual urine since the operation. I might also add that they have experienced an entire abatement of symptoms since their release from the hospital.

## COMMENT

I was particularly anxious to report these cases because of their oddity and because an exhaustive search of the literature failed to reveal similar anomalies. Here are twin boys, 27 years of age, whose facial characteristics are so similar that it is only with difficulty one can distinguish one from the other. Not only did their exterior but also their interior appearance prove to be similar, for when their bladders were examined cystoscopically identical malformations were found at the bladder neck.

Another peculiar circumstance was that the two boys started approximately at the same time to be annoyed with urinary symptoms, such as frequency, urgency

and nocturia, which prompted them at the same time to seek medical relief.

In both cases, after the vasa had been ligated, resection was done at one sitting under spinal anesthesia. They left the table with no bleeding and the return bladder flow showed but a slight pink the first twenty-four hours.

University Club Building.

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## STANDARDS AND LICENSURE IN OPHTHALMOLOGY

WILLIAM H. CRISP, M.D.
DENVER

Few would deny Emerson's pronouncement that "The first wealth is health." So essential to human happiness and prosperity is health and the normal functioning of the senses that it may be doubted whether any other profession carries so sacred a responsibility as that of the physician.

In no walk of life is the combination of high intelligence with thorough training so necessary as in the practice of medicine. A man with either mediocre intelligence or inadequate training is likely to commit fatal errors of judgment or execution, and, even though poor standards are excused in other occupations, they should be rigidly excluded as regards those whose duty it is to protect or restore the health of the body or its members.

The physician is interested in medical standards from two points of view: for the protection of the public and for the protection of the physician himself.

The physician is the principal guardian of the public in the standardization of medical practice, since the public cannot be expected to know so much about its own needs in this regard as the physician.

The physician has a perfect right to consider and protect his own interests in the standardization of medical practice, but he should never forget that the public interest is basic and will ultimately dominate the situation.

There are two principal ways in which the physician may protect the public from inferior medical standards. In the first place he may work directly toward improvement of standards. In the second place he may aim to increase the legal requirements for license to practice and may encourage legislation and regulation for the exclusion of impostors.

In working for betterment of standards by the provision of improved educational facilities and through the use of those facilities by himself and his colleagues, the physician is generally free from interference by the laity. But in the attempt to improve legal requirements the physician is often subjected to serious interference, because the public, through malign influence and the misunderstanding that comes from ignorance, often insists on giving the quack or the incompetent a free hand. Within the regular medical profession, real improvement in requirements for licensure does raise educational standards.

It is not so very long since the opportunity to practice the healing art depended primarily on the individual's determination to get his living by such practice, regardless of his ability to do so with safety to the public or with credit to himself. But gradually the public has obtained some protection against medical quackery and inefficiency, at least within the regular medical profession.

The laws with regard to the practice of general medicine have long made the mistake of assuming that because a man had once graduated from a recognized medical college and had met the requirements of a state board of medical examiners he would for the rest of his life continue to be adequately qualified to practice medicine or surgery or both. Yet medical science is constantly changing; from time to time new facts and methods are being discovered and applied to the diagnosis, prevention or cure of disease.

An even more serious mistake in legal requirements for the practice of medicine has been the assumption that a general medical degree and license to practice were sufficient evidence of the physician's qualification to practice on any part of the body or to apply himself, without further challenge, to any chosen field of specialization. Alike within the medical profession and among the ranks of the legalized irregulars, the laws of this country still permit any physician to practice a specialty, no matter how limited his qualifications.

In this and other countries there has been strenuous opposition to any plan for requiring special license for special practice. Such opposition is largely based on conservatism, on a limited conception of public rights and professional responsibilities, or on an unwillingness to disturb what is more or less frankly regarded as vested professional interest.

At the International Ophthalmologic Congress in Amsterdam, existing facilities for the systematic study of ophthalmology were reviewed by Dr. Walter R. Parker of Detroit and Dr. Carl Lindner of Vienna. In connection with the committee's investigations, Professor Villard [1] of the University of Montpellier, France, furnished a report on the practice and teaching of ophthalmology in the European countries of Latin tongue; that is to say, in Belgium, France, Italy, Portugal, Rumania and Spain.

The title of ophthalmologist, or its equivalent, had not yet been recognized by law in Belgium, France, Portugal or Spain but had received such recognition in Italy and Rumania. In Germany and Austria, where social insurance has become so general, no one can be accepted by the insurance organizations as an ophthalmologist unless he has given proof of definite qualification in the specialty. In France the great majority of ophthalmologists belong to the Syndicat des Oculistes Français, an organization created for professional defense and not for scientific purposes but the statutes of which require, in addition to the national diploma of docteur en médecine, proof of a course of at least two years in official or private ophthalmologic clinics. Unfortunately the statutes of the syndicate do not demand an examination.

The saving grace in the physician is to think of himself as the patient. Looking at the question frankly, the physician would often demand for himself and his family something better than he gives his patients. Above all he would demand that the physician or surgeon whom he employed was not one of mediocre training even if this were the usual quality of professional training in the community in which he lived, but rather a physician of the best training, one with the highest standards of training and equipment in the applied science of medicine or in the special branch of medicine involved.

Read before the Section on Ophthalmology at the Eighty-Fourth Annual Session of the American Medical Association, Milwaukee, June 14, 1933.

1. Villard, H.: Arch. d'opht. **48**: 125 (Feb.) 1931.

In considering to what extent such an ideal can be attained, two problems have to be faced: (1) as to what improvements are possible in methods of training for special practice; (2) the advisability and possibility of requiring special license for such practice.

There are few ophthalmologists practicing today who could not find some points of weakness in their own training for special practice. Most of them, at best, after a general medical training and internship in a general hospital, have picked up haphazard a great deal of clinical experience but very little theoretical and laboratory foundation, in institutions for treating diseases of the eye: they have not been taught ophthalmology along systematic, scientific lines. Too often they know very little about the finer details of ophthalmic anatomy, physiology or pathology, or concerning physiologic optics. In only three or four institutions in the United States could they obtain at the present time a systematic course of teaching that would cover the whole field of ophthalmology.

Ultimately, it is probable that no one will be allowed to hold himself out as a specialist in any well defined branch of medicine and surgery without having presented clearly authenticated evidence of a minimum period of training in an institution properly equipped and designed to furnish this kind of postgraduate study, and without having shown a satisfactory aptitude in mastering the necessary details of information and technic. It will not be sufficient for the candidate to state that he has attended such and such an institution or that he has acted as assistant to some reputable practitioner of the specialty; but he will have to present credits just as rigidly established as those which must be accumulated before facing final examinations for the degree of Doctor of Medicine.

This will involve the naming of institutions whose courses of postgraduate study and whose demands on the postgraduate student are officially recognized as satisfactory; and this in turn will require creation of teaching staffs of acknowledged efficiency. It will further demand, on the part of the community or of the individual or of both, the expenditure of far more money than is now being applied specifically to postgraduate teaching and study.

In ophthalmology, such official requirements for standardization might well result in the creation of accepted textbooks dealing with individual phases of the subject, such as refraction, ophthalmoscopy, perimetry, ocular histology and pathology, and ocular surgery. It might involve organized cooperation between a national examining body (representing perhaps conjointly the leading institutions for ophthalmologic education and the leading ophthalmologic societies) and the licensing boards of the separate states. It might lead to the development of a group of teachers in ophthalmology whose activities were definitely aimed at meeting educational requirements for special practice.

The proposal to require a special license for special practice will be subject to much criticism and is likely to be slow of adoption. It could not fairly be made retroactive and would have to be limited to the new generation of specialists.

The activities of the American Board for Ophthalmic Examinations, the pioneer in this field, have undoubtedly tended to raise standards of graduate education in ophthalmology; and the experience of the board ought to be the most fruitful source of indication as to possible improvement in such education in this country.

It is an interesting fact that applicants for the certificate of the American Board for Ophthalmic Examinations, in specifying details of their training, are particularly fond of emphasizing time spent in the study of ophthalmic operations, but they are less prone to give evidence of systematic preparation in anatomy, pathology, physiologic optics and refraction. But proper standardization should imply that the ophthalmologist goes into practice proficient in every field of his specialty; and, if any distinction should be made, it would be proper to insist most positively on thorough training in those branches of ophthalmic science which have importance for the greatest number of patients. With a proper knowledge of anatomy, pathology and physiologic optics, the ophthalmologist will seldom fail to have a clear mental picture of what may happen or is happening to his patient. With a good knowledge of the technic of ophthalmic operations but without the more basic studies, he is likely to suffer from many misconceptions and to be guilty of many errors in diagnosis and treatment.

When medical licensure laws were first passed, it was practically necessary to accept as qualified those who had already spent some years in the practice of medicine after the sort of inadequate training which was then almost universal. For more or less similar reasons, when the American Board for Ophthalmic Examinations first came into existence it was at least highly expedient to accept many of the candidates largely on the ground of years of practice, especially if the record included a term of preparation in a clinical institution for diseases of the eye. It was at that time impracticable to demand that all such candidates should submit themselves to detailed examinations in the basic subjects, especially along the more theoretical lines. But the board has now been in existence for seventeen years, and for those who began ophthalmic practice either since or within a few years before the beginning of the board's activities it seems desirable that the board's certificate shall no longer be issued without actual examination, even though excellent records of clinical and other practical experience are furnished. Among those who practiced ophthalmology long before the American board came into existence, some exceptions might still be made.

Speaking individually, and not in behalf of the board as a whole, I doubt whether one day is adequate for the board's examination, and I feel that better standards could be maintained if a whole day were devoted to the practical examination and another day to a searching written examination. This of course would involve a still greater sacrifice of time by the members of the board.

Without ample time for examination, it is often difficult to arrive at a satisfactory conclusion as to whether some of the less brilliant or less thoroughly successful candidates deserve to pass or fail, and the tendency in this situation is to err on the side of generosity toward the candidate. In the long run it is unfair to the student as well as to the public to pass the former on inadequate grounds. In this connection it is interesting to note that the American Institute of Accountants, one of the most efficiently organized professional examining bodies in the United States, has passed only about 12 per cent of candidates taking the institute's examinations during the last three years.

With the development of higher standards of requirement for issuance of the certificate of the American Board for Ophthalmic Examinations, it becomes

more and more desirable that the board should seek to encourage and stimulate the provision of thoroughly systematized courses of instruction, in which teachers and students alike would keep steadily in view clearly defined requirements of the board; and ultimately it will probably become necessary for the board to undertake official recognition of clinical institutions, university schools, textbooks, and even individual and limited courses in different parts of the country, as applicable to a student's preparation for the board's examination.

Several university schools in the United States are already giving courses that harmonize with the board's purposes. When the student's preparation for practice and for the board's examination is chiefly carried on in a clinical institution not directly connected with a medical school, it will be necessary to introduce into such an institution a much more definite course of systematic instruction in theory as well as in practice than is usual at the present time.

Some of the activities here more or less vaguely suggested will make heavy demands on the time and energy of the board or on any similar organization, and such increase of activity will have to be met by increased financial resources, for otherwise it would prove impracticable to carry on the necessary investigations with regard to available schools and clinical institutions.

The more dependent the profession and the community become on the ministrations of specialists in various branches of medicine, the more necessary it is that any physician recognized as practicing a given specialty shall be reliable in knowledge and practice. The profession as a whole, and particularly the specialists themselves, are probably not yet ready to accept the idea that supplemental licensure should be required for special practice, although there is a steady increase in the number of those who feel that adequate standards will not be enforced until this further development occurs. The centralized governments of Europe will find less practical difficulty in establishing such legal regulations than will the United States.

Recognition by hospitals and educational institutions of the certificate of the American Board for Ophthalmic Examinations as a basis of acceptance of those holding themselves out to be ophthalmic surgeons may go far toward solving the problem in this country. Unfortunately, such a voluntary type of regulation will always favor the existence of loopholes through which the less competent may impose on the public and even on the general medical profession.

An interesting scheme for voluntary and local regulation of the problem of special practice has recently been put forward in New Jersey.[2] The state of New Jersey had apparently been threatened with the passage of a law with regard to specialization of so stringent a character as to be unpractical. The state medical society therefore adopted a plan for certificating specialists through a committee of the society.

It may be that in the state of New Jersey such a scheme will prove practicable and will not become ineffectual as the result of personal intrigue and favoritism. Much more desirable, if it could be accomplished, would be a national plan which would be acceptable to the individual states and which would avoid the ridiculous multiplicity of licensing bodies now resting as a plague on the general practice of medicine.

The question of national coordination for control of special practice has for some time been under consideration by the Council on Medical Education and Hospitals of the American Medical Association and also by the National Board of Medical Examiners. Ultimately, it seems logical to suppose that public interest will demand and accept the requirement that any one laying claim to qualification for special practice must obtain a special license justifying that claim.

530 Metropolitan Building.

## ABSTRACT OF DISCUSSION

DR. T. B. HOLLOWAY, Philadelphia: The meaning of the author is not clear when he states that the public interest is basic and will ultimately dominate the situation. If by interest he refers to the attention of the public, my opinion is that its chief concern is with the cost of medical care. On the other hand, if he means the benefit or the welfare of the public, if individuals and certain small groups are excluded, I question whether the public is interested in the standardization of medical practice, if one may judge from the action of its representatives in certain legislative bodies. This year a bill was introduced in the house of representatives of Pennsylvania that would concede to the optometrists the privilege of emergency treatment in diseases and injuries of the eyes. What is more, the representatives of the public in the house passed the bill, but it has not become a law. Time does not permit adequate discussion of Dr. Crisp's criticism of the laws that permit the medical graduate who has passed his state board examination to be regarded as adequately qualified to practice medicine or surgery all his life. Many states require in addition to this a hospital internship, and I believe that Pennsylvania was the first to adopt such a plan. His "more serious mistake" as this relates to unchallenged specialization would require even more time to discuss. I must be content to say, with some chance of being misunderstood, that up to the present it would have been a mistake to do otherwise. However, I do agree with him that, ultimately, satisfactory evidence of efficiency will be required before specialization will be recognized and permitted. The important question is, just how and when is this to be accomplished? I believe that the institutions and the teachers exist but there is need of money and of students who are willing to accept the training that may be provided. As to the money, few people, even in the medical profession, realize how much it costs to conduct properly a course in graduate education, even when clinical teachers serve without salary, although they may carry a schedule of 150 or more hours a year. As to students, there are not many, even today, who desire to take a comprehensive course of two, three, or more years. The author has referred to the American Board for Ophthalmic Examinations and has expressed his opinion that more than one day should be given to the examinations; with this I am in accord. Why the board should concern itself about the certification of a candidate for any society, I do not understand. It has no obligations to the Academy or to the American Ophthalmological Society, and none was thought of when the board was established. The increase in the opportunities for graduate work, as well as in the equipment and teaching, that has occurred in this country during the past twenty years has been a real achievement and is far greater than is generally recognized. Short courses of intensive instruction are now available in various portions of this country. A group of well known teachers have willingly given of their time to carry on these courses without compensation.

2. A. M. A. Bulletin, January, 1933, p. 6.

**Descent of the Testes.**—Many observations proclaim also the dependence of primary sex characteristics on the equilibrium of the endocrine glands. In this connection, the demonstrated function of the pituitary gland in promoting descent of the testes is of interest. The fact that of all mammals only man shows the presence of pituitary hormone in the blood throughout gestation may be correlated with the fact that man is the only animal with testes descended at birth.—Schloss, O. M.: Interpretation of Some Recent Advances in Medicine in Terms of Equilibrium, *Am. J. Dis. Child.* **46**:1 (July) 1933.

# Clinical Notes, Suggestions and New Instruments

## WATER HEMLOCK POISONING

MYRL M. MILLER, M.D., AKRON, OHIO

Cases of hemlock poisoning, though relatively unusual, are not at all rare. The following case is reported not because of the rarity of the condition but because of the striking efficacy of the treatment employed; namely, the use of sodium amytal intravenously.

"The number of poisonous plants which are to be found growing wild or in gardens is much larger than is generally supposed, and the cases of poisoning annually reported are more numerous than is commonly realized. One of the most common ways in which poisoning occurs is from the eating of underground parts of plants which resemble more or less closely species that are known to be edible. Thus it has often happened that young folks off for a ramble in the country come across some wild plant that suggests parsnip or some similar herb and has an attractive looking root which has perhaps been uncovered by recent rains. Being hungry the trampers bite off a piece of the root, and finding that it tastes good they continue to eat it. Before long, distressing symptoms appear, leading within a few hours to violent convulsions and perhaps death. The plant of which they have eaten is probably the water hemlock, one of our commonest swamp or brookside plants and one of the most deadly. Fatal cases occur almost every year, especially among children, and many cattle are poisoned by eating various parts of the plant. Sometimes poisoning results from drinking water in which the roots have been bruised by trampling. The plant should be uprooted and destroyed wherever found. Another herb closely similar to the water hemlock and too common along waysides is the poison hemlock. This is most probably the plant by which Socrates was poisoned at the hands of the Athenians. Recent cases of poisoning have resulted from eating the root by mistake for parsnip, the leaves for parsley, and the seeds for anise. Children have been poisoned by blowing whistles made from the hollow stem." [1]

### REPORT OF CASE

C. S., a boy, aged 10 years, was brought to the emergency ward of the City Hospital of Akron, the evening of March 31, 1933, in convulsions. The intern had administered morphine sulphate, one-eighth grain (0.008 Gm.) hypodermically, 50 per cent magnesium sulphate, 1 cc. intramuscularly, and chloral hydrate, 30 grains (2 Gm.) by rectum. The chloral had not been retained. I found the child having extremely violent convulsions resembling those of strychnine poisoning. He was unconscious, cyanotic and continuously rigid, with the jaws clenched on a mouth gag held in place by two nurses; the pulse was feeble, and the pupils were widely dilated. Severe tonic seizures occurred every few minutes, accompanied by opisthotonos, cessation of respiration, extreme cyanosis and bloody froth at the mouth. No examination was attempted other than the inspection implied by the aforementioned description. The only significant points in the history were:

(*a*) The patient had cut his leg with an ax while chopping sticks one week previously.

(*b*) On the day of admission, he had been out in the meadow and had eaten some kind of plant.

Shortly after this history was obtained a neighbor boy brought in a tuberous root which he had seen the boy eating. The father looked at, smelled and tasted it and expressed the opinion that it was a wild parsnip, which he knew to be poisonous.

The boy had come in from his excursion apparently perfectly well, played with his dog, suddenly complained that he didn't feel well, walked upstairs, screamed for his mother to come up, saying that he felt awfully sick, and immediately passed into convulsions as described. It was not known how long before symptoms appeared that the child had eaten of the plant.

1. Sargent, F. L.: Plants and Their Uses, New York, Henry Holt & Co., 1913, pp. 192-194.

I gave the child 3 cc. more of 50 per cent magnesium sulphate intramuscularly and 15 grains (1 Gm.) more of chloral hydrate by rectum, which was retained. The convulsions continued unabated and with alarming severity. In view of recent reports of successful treatment of strychnine poisoning with sodium amytal intravenously, I then ordered sodium amytal, 3 grains (0.2 Gm.) given slowly intravenously. In about thirty seconds the child relaxed and the mouth gags could be removed. He went into a deep sleep with slow respirations, normal pulse, good color and contracted pupils. He had no more convulsions, but a few hours later he became hyperactive and "jumpy." He was given 1½ grains (0.1 Gm.) more of sodium amytal intravenously and remained asleep till the following morning, when he appeared perfectly normal, except that he was drowsy all day. The next day he was perfectly well.

The plant root was examined by Dr. Paul Acquarone, professor of botany at the University of Akron, who identified it as the tuberous rhizome of Cicuta maculata L., a variety of water hemlock. Dr. Acquarone says:

"There are a dozen or more species of Cicuta, chiefly European. Only three occur in the eastern two thirds of the United States. Of these, C. maculata is the only one producing tubers as large as the specimen you brought me. Incidentally, while all species of Cicuta are poisonous, C. maculata is by far the most toxic and is also the most common and the most pleasantly scented." [2]

### COMMENT

The United States Dispensatory [3] gives the following information regarding hemlock poisoning:

"Cicuta. Cicuta virosa L. Water Hemlock. Cowbane.—A perennial, umbelliferous European plant, growing on the borders of pools and streams. It is very poisonous to most animals, though said to be eaten with impunity by goats and sheep. A number of the species of Cicuta are intensely poisonous; indeed, the statement is made that C. maculata L. is the most poisonous plant native in the United States. . . . From C. virosa, Van Ankum obtained a resinous body which was intensely poisonous, resembling picrotoxin in its physiologic action, and to which he gave the name of cicutoxin. . . . The presence of a volatile alkaloid resembling coniine (the active principle of poison hemlock), and termed cicutine, has been observed by Wittstein and Buignet. According to Jacobson, cicutoxin is a complex derivative of pyrone and is fatal to lower animals in doses of 50 mg. per kilogram.

"The water hemlock grows in meadows and along the borders of streams throughout the United States. In several instances children have been fatally poisoned by eating its root. This consists of several oblong, fleshy tubers, sometimes as long as the finger, spreading out from the base of the stem, and having an odor and taste not unlike those of parsnip. Egdahl [4] has collected the history of forty-six cases of poisoning by Cicuta, of which twenty-one were fatal. Nausea, vomiting and convulsions occurred in practically all the cases. In most of them there was also bloody froth at the mouth and in many dilated pupils and unconsciousness. In his own case there was cyanosis, apparently from interference with the respiration by the convulsions.

"In Cicuta poisoning there is generally violent vomiting, followed by vertigo, cold, clammy skin, slow feeble pulse, general convulsions and later paralysis, unconsciousness and dilated pupils."

Cicuta should not be confused with its relative conium, commonly called poison hemlock, St. Bennett's herb or fool's parsley, because of the difference in their active toxic principles and in their effects. The active principle of the latter is a volatile alkaloid, coniine or conine. According to the U. S. Dispensatory,[5] "Hemlock or conium is supposed to be the narcotic used by the Athenians to destroy the life of condemned individuals, and by which Socrates and Phocion died. The most important effect of the alklaloids of conium is a paralysis of the peripheral motor nerve endings. In the account

2. Acquarone, Paul: Personal communication to the author.
3. Remington, J. P., and Wood, H. C., Jr.: United States Dispensatory, ed. 20, Philadelphia, J. B. Lippincott Company, p. 1322.
4. Egdahl, Anfin: A Case of Poisoning Due to Eating Poison Hemlock (Cicuta Maculata), Arch. Int. Med. **7**: 348 (March) 1911.
5. United States Dispensatory, pp. 1333-1335.

of the death of Socrates, reference is made to loss of sensation as one of the prominent symptoms of his poisoning and there is evidence that the drug has an effect upon the sensory as well as the motor nerves, but the dominant action is certainly upon the motor system. It has been used as an antispasmodic drug, but Hayashi and Muto have shown that the phrenic nerve is more susceptible to the drug than the other motor nerves of the body."

These differences in action, the cicutoxin of water hemlock (Cicuta) causing convulsions, whereas the coniine of poison hemlock (Conium) causes loss of sensation and paralysis, supply additional confirmation that the tuberous rhizome ingested in this case of hemlock poisoning belongs to the water hemlock variety rather than to the so-called poison hemlock.

### SUMMARY AND CONCLUSION

1. The active toxic principle of water hemlock is cicutoxin, which causes violent convulsions. There are differences between the cicutoxin of water hemlock and coniine, the toxic principle of poison hemlock (Conium).

2. Recovery was prompt following control of the convulsions with sodium amytal intravenously. It appears that the action of sodium amytal in the treatment of convulsions due to hemlock poisoning is similar to that reported in cases of strychnine poisoning.

3. It appears that cicutoxin is either eliminated or detoxified completely in a short time and that all that is necessary in the way of treatment is to control the convulsions.

4. Sedation with sodium amytal or some similar preparation is a life saving measure definitely indicated in cases of water hemlock poisoning.

363 South Arlington Street.

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# Council on Physical Therapy

THE COUNCIL ON PHYSICAL THERAPY OF THE AMERICAN MEDICAL ASSOCIATION HAS AUTHORIZED THE PUBLICATION OF THE FOLLOWING REPORT.

H. A. CARTER, Secretary.

## OXYGENAIRE ACCEPTABLE

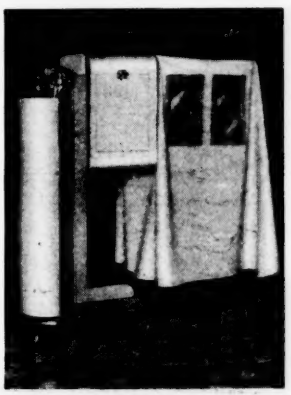
The Oxygenaire, an oxygen therapy tent, manufactured and sold by the American Hospital Supply Corporation, 15 North Jefferson Street, Chicago, has been submitted to the Council on Physical Therapy for consideration and report. This tent is recommended by the firm as satisfactory for use whenever oxygen therapy is indicated. The conditions under which oxygen therapy is advisable are described in the Council-adopted article "Oxygen Therapy," by Dr. Walter M. Boothby.[1] Unlike other oxygen tents examined by the Council, this unit is not provided with a motor-fan assembly or an injector for circulation of the oxygen-rich atmosphere. To circulate the oxygen-rich mixture, the Oxygenaire relies on the convection currents set up by the energy obtained from melting ice. The apparatus stands 60 inches high in a working position. It has an overall width of about 26 inches and requires only a floor space of about 2 by 3 feet for storage. It is adjustable in height from 24 inches to 44 inches, giving a range of practically 20 inches. The shipping weight is 300 pounds.

The chassis is mounted on four ball-bearing swivel casters 5 inches in diameter with rubber tires, so that ready adjustment may be made in any direction. The platform of the chassis is black enamel. The remainder of the chassis is finished in three tones of pastel green, and the apron covering the tank and the cabinet are finished in a light pastel green that matches the green canopy. The cabinet is 26 inches high, 24 inches wide and 19 inches deep. All inside parts are made of rustless material. The ice basket is 20 inches long, 10 inches wide and 14 inches deep and holds about 65 pounds of ice. A shallow soda lime tray designed to maintain the proper carbon dioxide concentration is placed immediately above the ice basket for ready placement or withdrawal.

There are two tent units, one regular size 26 by 24 inches at the top, which is held about 30 inches above the bed, allowing a little more than 10 cubic feet of air space inside. The larger tent, all-over-bed size, has the same measurements at the top and is supported the same way, but the skirt is large enough to tuck under the mattress all the way round the bed. Each tent has six small windows, two on top, two on each side and one large one opposite the cabinet. The tent is equipped with a large sleeve, which is self closing and placed conveniently opposite the cabinet. The regular size tent is standard and the large size tent is optional. The tent is made of a double faced rubber surfaced material developed to have a great deal of give and stretch for wearing purposes and is finished in an attractive pastel green. All exposed metal parts are finished in dull chromium plate.

When in operation, the ice basket needs an additional supply of ice every three or four hours to insure maximum efficiency. With the full ice supply (65 pounds) and a room temperature of 88 F., the inside tent temperature may be maintained at about 65. This may be further reduced by using salt to accelerate the melting of the ice; naturally, more ice must be used. In ten minutes the tent temperature may be reduced over 60 per cent of the maximum drop. In twenty minutes the full drop in temperature may be reached. The addition of salt to the ice reduces the temperature about 5 degrees lower. Salt is needed only in extreme cases and on the hottest days in summer.

The atmospheric circulation in the Oxygenaire has been charted and with a full ice basket there is practically a complete change of air mixture every minute. With the ice chest half full, this flow is reduced about 20 to 25 per cent. To secure the best results, the ice basket should be kept full, or nearly so.



Oxygenaire

Oxygen is introduced into a compartment immediately below the ice water in the bottom of the cabinet. It flows through a series of holes in the lower front panel of the cabinet right into the tent not too near the patient's face. This makes it possible to maintain a continuous flow of oxygen into the tent, even though, for the purpose of re-icing, the shutters temporarily close off the ice compartment from the tent. A patient need never be without oxygen.

The ice compartment is accessible by means of a side door which is self supporting in a level position. The ice basket can be pulled out horizontally, making it simple to add ice when needed.

The tent is so designed that it may be folded back against and over the cabinet, so that in storage it occupies a minimum amount of room. It does not need to be detached or disconnected in any way to be folded back.

The oxygen regulator assembly is permanently mounted to the chassis. It is expected that this may help eliminate breakage through handling. It is fitted with two gages, one of which registers pounds of pressure in cubic foot capacity of the tank, the other of which registers the flow in liters from 1 to 15, all of which is graduated by single liters from 1 to 15. This assembly includes a sight-flow bottle by which the oxygen bubbles through a water jar to make it possible for the operator to recognize at a glance that oxygen is actually flowing. The assembly is so designed that the connecting nut is exactly located for attachment to the standard commercial oxygen tank.

In the back of the cabinet the Oxygenaire is equipped with a hose connection cutoff. This serves two purposes. Either additional carbon dioxide may be introduced into the air circulation through this inlet, or it may be used as an outlet for making a gas analysis and checking both oxygen and carbon dioxide concentrations in the tent. A rubber hose attached from the gas analyzer to this connection will give the operator a typical sample of the atmosphere inside the tent.

Physically, the Oxygenaire is well constructed, attractive and simple in operation. Being a motorless tent, it depends on its energy for circulation by convection currents generated by melting ice in the chamber on one side and the heat of the patient

1. Boothby, W. M.: Oxygen Therapy, J. A. M. A. **99**: 2026 (Dec. 10), 2106 (Dec. 17) 1932.

in the tent proper on the other, between which there is free communication of air mixture. Smoke tests indicate a satisfactory circulation of air within the tent, depending on the amount of ice in the chamber.

The Council test revealed that an oxygen saturation of 50 per cent may be obtained in fifteen minutes by a flow of 7 or 8 liters a minute, and this concentration may be maintained with a continuous flow of from 1.5 to 4 liters a minute, depending on how carefully the patient is tucked in or how well the mattress is rubberized. By holding down on the oxygen by-pass valve, the tent may be flooded with oxygen more readily.

The carbon dioxide concentration tended to rise 3 or 5 per cent with toxic manifestations in the earlier investigations of this tent, but with an improvement of the soda lime tray a level of from 1 to 1.5 per cent is readily maintained. Circulation within the tent is efficient when the tray is only thinly covered with soda lime. The soda lime tray must be serviced two or three times daily.

Temperature and humidity were very well controlled in test cases of patients having pneumonia, heart failure, edema of the lung due to drowning and also in tests on normal subjects. During a recent heat wave, when the temperature was over 90 in the ward, a temperature of 71 or 72 was maintained in the tent.

The Council believes that this is a simple and efficient type of oxygen tent. However, like all oxygen therapy apparatus, accurate check on the concentration of oxygen and carbon dioxide must be made regularly to insure the proper control. The valves and flow meters operate satisfactorily.

The Council on Physical Therapy declares the Oxygenaire acceptable for inclusion in its list of accepted devices for one year.

# Committee on Foods

THE FOLLOWING PRODUCTS HAVE BEEN ACCEPTED BY THE COMMITTEE ON FOODS OF THE AMERICAN MEDICAL ASSOCIATION FOLLOWING ANY NECESSARY CORRECTIONS OF THE LABELS AND ADVERTISING TO CONFORM TO THE RULES AND REGULATIONS. THESE PRODUCTS ARE APPROVED FOR ADVERTISING IN THE PUBLICATIONS OF THE AMERICAN MEDICAL ASSOCIATION, AND FOR GENERAL PROMULGATION TO THE PUBLIC. THEY WILL BE INCLUDED IN THE BOOK OF ACCEPTED FOODS TO BE PUBLISHED BY THE AMERICAN MEDICAL ASSOCIATION.

RAYMOND HERTWIG, Secretary.

## TIDAL WAVE FLOUR—BLEACHED
## TIDAL WAVE BAKERS FLOUR—BLEACHED

*Manufacturer.*—Texas Star Flour Mills, Galveston, Texas.

*Description.*—Hard winter wheat "long patent" flours; bleached.

*Manufacture.*—Selected hard winter wheat is cleaned, scoured, tempered and milled by essentially the same procedure as described in THE JOURNAL, June 18, 1932, page 2210. Chosen flour streams are blended and bleached with nitrogen trichloride (one-ninth ounce per 196 pounds) and with a mixture of benzoyl peroxide and calcium phosphate (1 part to 50,000 parts flour).

*Claims of Manufacturer.*—For general baking in the home and bakery.

## McCORMICK'S BEE BRAND CINNAMON (POWDERED)
## SAIGON CINNAMON BEE BRAND (STICKS)
## CEYLON CINNAMON BEE BRAND (STICKS)
## BATAVIA CINNAMON BEE BRAND (STICKS)

*Manufacturer.*—McCormick and Company, Inc., Baltimore.

*Description.*—Ground bark of cinnamon cassia; or dried strips of cinnamon cassia bark from the Far East.

*Manufacture.*—The ground cinnamon is prepared from dry barks of cinnamon cassia in China, Java or other Far East countries. The first year's growth produces a slender twig from which the bark is easily stripped in the spring. As the trees grow older, the bark from shoots and boughs becomes heavier and thicker. In harvesting the cinnamon bark, the shoots are gathered from the first and second year's growth, tied in bundles and stored in sheds for a short time, after which the bark is easily removed. The stripped bark is allowed to dry, is exported to the company's packing plant, is cleaned, and packed ground or whole in tins or cartons.

*Analysis* (submitted by manufacturer).—

| | per cent |
|---|---|
| Moisture | 8.1 |
| Total ash | 4.2 |
| Acid insoluble ash | 0.1 |
| Nonvolatile ether extract | 3.2 |
| Volatile ether extract | 4.3 |
| Protein (N × 6.25) | 3.7 |
| Crude fiber | 24.1 |
| Carbohydrates other than crude fiber (by difference) | 52.4 |

*Claims of Manufacturer.*—Conforms with the respective United States Department of Agriculture definition and standard.

## GERBER'S STRAINED PEAS

*Manufacturer.*—Gerber Products Company, Fremont, Mich.

*Description.*—Strained cooked green peas retaining in high degree the natural vitamin and mineral values; the coarser fibrous material is removed. No added seasoning or sugar.

*Manufacture.*—Sweet wrinkled varieties of peas grown from selected seed under company supervision are harvested at the proper state of maturity, promptly washed, inspected, cooked, sieved, canned and processed as described for Gerber's Strained Vegetable Soup (THE JOURNAL, July 22, 1933, p. 282).

*Analysis* (submitted by manufacturer).—

| | per cent |
|---|---|
| Moisture | 87.3 |
| Total solids | 12.7 |
| Ash | 0.4 |
| Fat (ether extract) | 0.3 |
| Protein (N × 6.25) | 3.2 |
| Reducing sugars before inversion (as invert) | 0.2 |
| Sucrose (copper reduction method) | 2.9 |
| Starch (acid hydrolysis method) | 3.6 |
| Crude fiber | 0.4 |
| Carbohydrates other than crude fiber (by difference) | 8.4 |

*Calories.*—0.5 per gram; 14 per ounce.

*Vitamins, Minerals and Claims of Manufacturer.*—See Strained Vegetable Soup (THE JOURNAL, July 22, 1933, p. 282).

## HYGEIA PURE STRAINED PRUNES FLAVORED WITH LEMON JUICE
### CONTAINS ADDED VITAMIN D (60 STEENBOCK VITAMIN D UNITS PER FLUIDOUNCE)

*Manufacturer.*—Snider Packing Corporation, Rochester, N. Y.

*Distributor.*—Hygeia Nursing Bottle Company, Inc., Buffalo.

*Description.*—Sieved prunes flavored with lemon juice; with added vitamin D (viosterol), 60 D units per fluidounce. The D units are those defined by the Council on Pharmacy and Chemistry of the American Medical Association (New and Nonofficial Remedies, 1933, p. 428). One fluidounce is equivalent in vitamin D to the D content of one teaspoonful of cod liver oil (60 D units).

*Manufacture.*—Dried, pitted prunes are soaked in cold water and simmered for thirty-five minutes at 85 C. in an atmosphere of steam; sufficient lemon juice and viosterol in corn oil are added to produce a citric acid content of from 0.5 to 0.6 per cent and a vitamin D content of 60 D units per fluidounce in the final product. The mixture is heated two minutes, pureed, heated to 88 C. in an atmosphere of steam, filled into cans which are sealed at 82 C., cooled and packed.

*Analysis* (submitted by manufacturer).—

| | per cent |
|---|---|
| Moisture | 70.4 |
| Total solids | 29.6 |
| Ash | 0.9 |
| Sodium chloride (NaCl) | 0.03 |
| Fat (ether extract) | 0.7 |
| Protein (N × 6.25) | 1.0 |
| Reducing sugars as invert sugar | 18.8 |
| Sucrose | 0.0 |
| Crude fiber | 0.5 |
| Carbohydrates other than crude fiber (by difference) | 26.0 |
| Titratable acidity as citric acid | 0.5 |

*Calories.*—1.1 per gram; 31 per ounce.

*Vitamins.*—See this section for Hygeia Pure Strained Peas. Contains Vitamin D (THE JOURNAL, Feb. 13, 1932, p. 555).

*Claims of Manufacturer.*—Recommended for infants, children, convalescents and in special diets. Prepared to contain 60 D Steenbock units per fluidounce and largely retain the natural vitamin and mineral values of prunes.

(1) KAMO BRAND AMBER SYRUP
(CORN SYRUP 85%, REFINERS' SYRUP 15%)
(2) ANGEL FOOD BRAND GOLDEN BROWN SYRUP
(CORN SYRUP 85%, REFINERS' SYRUP 15%)

*Packer.*—Wheeler-Barnes Company, Minneapolis.

*Distributors.*—1. Paxton and Gallagher Company, Omaha. 2. Winston and Newell Company, Minneapolis.

*Description.*—Corn syrup flavored with refiners' syrup; the same as Golden Oak Brand Amber Corn Syrup (Corn Syrup flavored with Refiners' Syrup) (THE JOURNAL, Dec. 3, 1932, p. 1948).

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ROUNDY'S SUPREME MIXED VEGETABLES

*Packer.*—The Larsen Company, Green Bay, Wis.

*Distributor.*—Roundy, Peckham & Dexter Company, Milwaukee.

*Description.*—Mixture of carrots, potatoes, celery, green beans, cabbage, peas, corn, lima beans, onions, sweet peppers, salt and water prepared by efficient methods for retention in high degree of the natural mineral and vitamin values of the respective vegetables. No added sugar or salt. The same as Larsen's Veg-All, "A Magic Garden" for Soups, Salads, Vegetable Dishes (THE JOURNAL, Aug. 12, 1933, p. 535).

---

CANOVA BRAND COFFEE (GROUND)

*Manufacturer.*—Maury-Cole Company, Inc., Memphis, Tenn.

*Description.*—Ground roasted coffee sealed in tins in a "vacuum" (2 inches mercury pressure).

*Manufacture.*—Different varieties of "green coffee" are blended in mixers in units of approximately 1,200 pounds; a strong draft of air removes foreign material. The coffee is roasted at 180 C. for thirty minutes; a definite quantity of water is injected into the roasters to stop the roasting quickly. The coffee is air cooled and passed through a "stoner" to remove material heavier than coffee, and at the same time air blasts remove light materials. It is ground to the desired granulation for the different methods of beverage preparation and passed through a "normalizer" to obtain a uniform distribution of differently sized particles. The prepared coffee is automatically sealed in tins in a "vacuum" (2 inches mercury pressure).

*Analysis* (submitted by manufacturer).—

| | per cent |
|---|---|
| Moisture | 4.8 |
| Soluble solids | 5.1 |
| Ash | 3.3 |
| Petroleum ether extract | 10.3 |
| Total nitrogen | 2.6 |
| Protein (noncaffeine N × 6.25) | 14.8 |
| Reducing sugar as invert sugar | 0.1 |
| Sucrose (copper reduction method) | 0.6 |
| Caffeine | 0.9 |
| Crude fiber | 21.1 |
| Carbohydrates other than crude fiber (by difference) | 44.8 |
| Total acidity | 173 cc 0.1 N alkali per 100 gram coffee |
| Chlorides | trace |

*Claims of Manufacturer.*—Sealed in "vacuum" to retain freshness and flavor.

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CAREY'S IODIZED SALT (FREE RUNNING)

*Manufacturer.*—The Carey Salt Company, Hutchinson, Kan.

*Description.*—Table salt containing 0.7 per cent added magnesium carbonate and 0.02 per cent potassium iodide.

*Manufacture.*—Carey's Free Running Salt (THE JOURNAL, Aug. 26, 1933, p. 676) is admixed with 0.02 per cent potassium iodide and 0.7 per cent magnesium carbonate.

*Analysis* (submitted by manufacturer).—

| | per cent |
|---|---|
| Moisture | 0.01 |
| Calcium carbonate | 0.02 |
| Calcium sulphate | 0.82 |
| Calcium chloride | 0.03 |
| Magnesium chloride | 0.02 |
| Magnesium carbonate | 0.65 |
| Sodium chloride (NaCl) by difference | 98.4 |
| Iron and aluminum oxides | 0.01 |
| Potassium iodide | 0.02 |

*Claims of Manufacturer.*—This iodized salt is for all table and cooking uses of salt. The magnesium carbonate tends to preserve its free running qualities. The iodine in the salt aids in preventing goiter caused by insufficient iodine in the diet. Used daily as the only salt on the table and in cooking, it richly supplements the iodine of diets deficient in that element. Does not cake or harden in the package.

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CURTISS BABY RUTH ANISE CANDY TABLETS
CURTISS BABY RUTH CLOVE CANDY TABLETS
CURTISS BABY RUTH LEMON CANDY TABLETS
CURTISS BABY RUTH LIME CANDY TABLETS
CURTISS BABY RUTH ORANGE CANDY TABLETS
CURTISS BABY RUTH PEPPERMINT CANDY TABLETS
CURTISS BABY RUTH WINTERGREEN CANDY TABLETS
CURTISS BABY RUTH WILD CHERRY (IMITATION) CANDY TABLETS
CURTISS BABY RUTH ROOT BEER CANDY TABLETS

*Manufacturer.*—Curtiss Candy Company, Chicago.

*Description.*—Confection tablets containing sucrose, corn syrup and stearic acid; respectively flavored with U. S. P. oils of anise, clove, lemon, lime, orange, peppermint or wintergreen; or with imitation wild cherry, or root beer (oil of sassafras and U. S. P. methyl salicylate) flavor.

*Manufacture.*—The semiplastic mix of sugar and corn syrup is spread on muslin trays in a warm room to dry, is mixed with the respective flavors and stearic acid, and finely ground and pressed into small disk tablets, which are automatically wrapped.

Stearic acid, a high melting point (65 C.) fatty acid, is added to lessen metallic wear of punch bars.

*Analysis* (submitted by manufacturer).—

| | per cent |
|---|---|
| Moisture and volatile substances | 1.6 |
| Ash | 0.1 |
| Fat (ether extract) | 0.6 |
| Protein (N × 6.25) | 0.0 |
| Reducing sugars as dextrose | 7.4 |
| Sucrose (copper reduction method) | 79.2 |
| Crude fiber | 0.0 |
| Carbohydrates (by difference) | 79.7 |

*Calories.*—4.0 per gram; 114 per ounce.

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## REPORTS OF THE COMMITTEE

THE COMMITTEE HAS AUTHORIZED PUBLICATION OF THE FOLLOWING REPORTS.

RAYMOND HERTWIG, Secretary.

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*NOT ACCEPTABLE*

PHROSTED PHROOT PIE (PINEAPPLE-CHERRY COMBINATION) AND PHROSTED PHROOT PIE (PINEAPPLE)

The Frosted Fruit Corporation, Chicago, submitted to the Committee on Foods the two products "Phrosted Phroot Pie (Pineapple-Cherry Combination)" and "Phrosted Phroot Pie (Pineapple)" prepared, respectively, from frozen mixtures of canned crushed pineapple, canned cold packed cherries, sucrose syrup and gelatin and of canned crushed pineapple, sucrose syrup and gelatin.

*Discussion of Names, Labels and Advertising.*—The designation "Phrosted Phroot" signifies an unmixed frozen fruit, whereas frozen fruit is only one of the ingredients of the articles; the fruit is admixed with sucrose, water and gelatin. The designation "Phrosted Phroot," therefore, is inappropriate. Some simple descriptive statement, such as "fruit, syrup and gelatin," accompanying the name "Phrosted Phroot" would inform the consumer of the true nature of the articles and avoid possible deception.

The manufacturer was advised of these opinions and recommendations but has not demonstrated willingness to act thereon. These products will therefore not be listed among the Committee's accepted foods.

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SATURDAY, SEPTEMBER 9, 1933

## THE N. I. R. A. DRUG TRADE CODE AND THE DOCTOR

The medical profession is concerned not only with its direct relations to the National Industrial Recovery Act but also with the code for the retail drug trade and possibly other codes. There is danger that provisions involving the medical profession, hospitals, dispensaries and similar institutions may react to the disadvantage of the public. The proposed code of fair competition for the retail drug trade, formulated by representatives of the National Association of Retail Druggists and the American Pharmaceutical Association and by others, August 26, embodies provisions that may have that effect. These provisions are susceptible, apparently, also of innocuous interpretations. There is no reason, however, why the code should not be made clear.

The code is worded so as to apply "to any individuals or organizations engaged in the selling at retail of drugs, medicines, cosmetics, toilet preparations and drug sundries." Under such language, it is not impossible to hold that a physician, a hospital or a dispensary that dispenses medicines to patients and collects even the actual cost of the drugs dispensed sells those drugs at retail and is therefore within the purview of the code. The code proposes, furthermore, to define as drugs "all devices, intended to affect the structure or any function of the body of man or other animals." Obviously, this would bring under the retail drug code every optician and optometrist who supplies glasses, every dentist who supplies his patients with false teeth, and every surgical supply dealer who sells trusses, prosthetic devices and similar wares, for they would be "drugs" under the proposed code, and those who sold them at retail would be members of the drug trade.

This proposed code is susceptible of being construed to bring within its terms every drug room in every hospital and dispensary in the country, where any charge whatever is made for drugs, and therefore to require the constant presence of one or more registered pharmacists. The code provides that the term "drug store" or "pharmacy" means "a retail establishment primarily engaged in the business of compounding and dispensing physicians' prescriptions and the selling of drugs, medicines, chemicals, and allied items and which place of business shall at all times be under the direct and personal supervision of one or more registered pharmacists." Hospitals, dispensaries and other institutions maintaining drug rooms and making any charge for drugs supplied would be members of the drug trade and subject to all of the provisions of the code for retail druggists.

The retail drug code proposed by the National Association of Retail Druggists and the American Pharmaceutical Association prohibits giving "any trade allowance" to any purchaser in connection with the sale of any product or article, or delivering to such purchaser in connection with such sale any other merchandise of any description, on payment in accordance with the provisions of this code. The obvious purpose of this provision is to require uniformity of prices to all comers, and the code itself makes no exception permitting special prices to physicians, dentists, nurses, veterinarians and hospitals. Those responsible for the framing of the proposed code, however, propose that a note be appended, providing that nothing in the code shall prevent any person from selling any drug or drug sundry at retail at a different price to a physician, nurse, dentist, veterinarian or hospital. Why there should be any unwillingness to make this exception a part of the code itself, instead of appending it as a note, is not clear, if it is to be operated as a part of the code. Neither is it clear why the granting of professional and institutional prices to physicians, nurses, dentists, veterinarians and hospitals should be limited to sales "at retail," whatever that phrase may be construed to mean.

While the proposed drug trade code is subject to the criticisms stated, and to the further criticism that no provision is made for representation of consumers on the governing board that it is proposed to create to administer it, the code does contain an admirable provision concerning retail advertising. Under this provision, no member of the retail drug trade may use advertising—whether printed, radio, display or of any other nature—"which is inaccurate and/or in any way misrepresents merchandise (including its use, trademark, grade, quality, quantity, substance, character, nature, origin, size, material, content or preparation), or credit terms, values, policies or services, nor shall any member of the retail drug trade use advertising or selling methods which tend to deceive or mislead the consumer including 'bait' offers of merchandise." If the National Recovery Administration can induce all branches of the drug trade to accede to and enforce such a provision with respect to the advertising of drugs, it will accomplish a moral and health benefit that alone will be well nigh sufficient to justify its existence.

## DIURNAL CHANGES IN BODY TEMPERATURE

Despite the marvelous devices at the disposal of the organism for adjusting itself to an increment or a decrement of heat in the internal or the external environment, the adjustments are never instantaneous. Broadly speaking, the temperature of man is constant; he is a homoiothermic individual rather than a heterothermic animal that exhibits a temperature little different from that of its surroundings. Nevertheless the temperature of man almost invariably rises even after slight muscular exercise, and some time may elapse thereafter until the "normal" figure is again reached. Even William Beaumont recognized this in his observations on Alexis St. Martin through a gastric fistula more than a century ago. The second important fact is the undisputed existence of a diurnal variation of human temperature, often amounting to a degree Fahrenheit or more in the course of twenty-four hours.

Every physician has learned to take cognizance of this fluctuation in evaluating the temperature records secured in his examination of patients. Most persons show a temperature curve with a maximum in the afternoon and a minimum in the early hours of the morning. Years ago there was considerable debate as to whether this diurnal variation was due to external, or cosmic, causes rather than to changes in the person involved. Two physiologists, R. B. Gibson and W. A. Osborne, made observations on themselves while traveling half way round the world. During the period there was, of course, a gradual reversal of the relative time of day and night. The body temperatures retained their usual relations to the routine of the person involved.

In the latest study of the diurnal temperature changes in man, Kleitman and Doktorsky [1] of the Department of Physiology at the University of Chicago have considered the effect of the position of the body and of sleep on the rectal temperature. The general trend of the body temperature on lying down, before, during and after sleep, is downward. The Chicago physiologists conclude that a change in the body from vertical to horizontal leads to a fall in temperature. If the supposition that this is due mainly, if not entirely, to muscular relaxation is correct, they add, it would indicate that the diurnal temperature curve may be due to a diurnal change in the tonus of the skeletal musculature and that the downward trend of the temperature curve in the evening represents a gradually increasing muscular relaxation. This would explain why, if one stays awake all night, somnolence becomes increasingly difficult to resist until about 3 or 4 o'clock in the morning, afterward progressively decreasing in intensity. Under ordinary conditions, going to bed at night when the muscle tonus is low leads to a further decrease in tonus (as indicated by the low temperature), thus producing an additional decrease in the number of proprioceptive impulses reaching the cerebral cortex and making continued wakefulness impossible.

After the onset of sleep the temperature may or may not show a renewed drop, depending on the degree of muscular relaxation already attained and on the time of the day or night. Kleitman [2] has also attempted to discover whether or not diurnal sleep can be brought into a causal relationship with some of the other diurnal changes. The subjective manifestations are familiar to every one. As Kleitman has pointed out, the diurnal sleep habit manifests itself in a state of drowsiness which gradually overtakes one in the evening, leading to a disinclination to continued wakefulness. Depending on the regularity of one's daily routine, this drowsiness may or may not appear at a certain hour and may or may not be allowed to develop to the point of practical irresistibility. Usually one cooperates by retiring into a quiet dark room and lying down on a comfortable couch, sleep readily supervening. Under unusual conditions when unvaried events in the environment cause a continued stream of impulses to reach the central nervous system from the different sense organs, the onset of sleep may be delayed far beyond the customary hour of retiring. Investigations [2] at the University of Chicago indicate that there is a diurnal variation in the speed and accuracy of performance in man, with a maximum in the afternoon and minima early in the morning and late at night. This variation, like that in body temperature and urinary excretion of phosphates, may be due to a diurnal rhythm in the tonicity of the skeletal musculature, which is probably responsible for the development and persistence of the diurnal sleep habit.

1. Kleitman, Nathaniel, and Doktorsky, Abraham: The Effect of the Position of the Body and of Sleep on Rectal Temperature in Man, Am. J. Physiol. **104**: 340 (May) 1933.

2. Kleitman, Nathaniel: Studies on the Physiology of Sleep: VIII. Diurnal Variation in Performance, Am. J. Physiol. **104**: 449 (May) 1933.

## THE ACID FACTOR IN PEPTIC ULCER

The old question Why does the stomach not digest itself? used to evoke endless discussion; the fact that it does digest itself, locally at least, in the case of peptic ulcer is equally mysterious and, of course, of far greater practical importance. The tremendous clinical and experimental work on record has led to the formulation of a variety of theories, seldom supported by adequate evidence. Embolic, toxic, chemical, bacteriologic or allergic factors, and not unusually a combination of part or all of them, may be emphasized. The true explanation still remains a challenge to medical progress.

When pathogenesis is not well understood, therapy also is a field for conflict and dispute. In the case of peptic ulcer the polemics have at times waxed widely and furiously. The battle still smolders occasionally not only between the advocates of medical versus surgical treatment but also between various methods in each group. Medically, a number of different dietetic

regimens are offered, most of them variations of the Sippy diet; in addition, a large number of other remedies are recommended, such as nonspecific protein therapy, powdered mucus and "antipepsin" injections. Surgically, a number of different operations are in current use and there is still a great dispute between the advocates of gastric resection and of gastro-enterostomy. The average physician therefore looks to newer evidence which holds promise of explaining the why of gastric and duodenal ulcer so that he may determine the how of his therapeutic attack.

During the past few years, evidence has been accumulating in support of the acid factor, which, it has been found, may not only play a part in initiating ulcerations of the duodenum and stomach but, of greater importance, may prevent healing and hence lead to chronicity and to the two major complications of ulcer; that is, hemorrhage and perforation. The acid factor, it is true, has long been mentioned, in fact, ever since it was first noticed that patients with ulcer are apt to have a high titratable acidity in their gastric contents. Its importance, however, has only recently become apparent, for much evidence has been accumulating to show that it may be the prime factor in the pathogenesis of ulcer. This evidence is of various kinds. Spontaneous digestion of living tissue by pure gastric juice, for example, can be demonstrated [1] in vitro, provided only the acidity is high enough (above 0.15 per cent of hydrochloric acid). Though the acidity of normal gastric contents is usually below this level, acidity values much higher are not infrequent in patients with ulcer and with severe "hyperacidity."

Experiments in vivo also are successful in demonstrating at least local digestion, provided the natural tendency of gastric juice to become neutralized is prevented. If, in any way, gastric juice of a high acidity is allowed to pass over intestinal mucosa, a peptic ulcer develops at the point where the active juice first strikes the adjacent tissue. Thus, if neutralization is prevented by diverting the alkaline secretions of the duodenum, gastric juice becomes highly acid [2] and will form an ulcer just beyond the exit of the stomach.[3] The ulcer heals when the alkaline secretions are restored.[4] A spontaneous ulcer will form beyond the exit of an isolated stomach pouch from which a highly acid juice is flowing.[5] When gastric mucosa is found in Meckel's diverticulum, a peptic ulcer may form in the ileac mucosa next to it. The digestion frequently erodes a blood vessel and results in hemorrhage and in some cases may even go on and cause an actual perforation.[6] A summary of many of these observations as well as new observations of similar nature of their own can be found in a recent paper by Matthews and Dragstedt.[7] Older evidence also illustrates the importance of the acid factor. Thus, it is an often acknowledged observation that operations for peptic ulcer which achieve a postoperative anacidity are most apt to succeed and lead to healing. Patients with active duodenal ulcer always have acid in the gastric juice; moreover, neutralization of the gastric free acidity in these cases favors the healing process. Anacidity, which occurs in 12 per cent of normal adults, never occurs in those with duodenal ulcer.[8] These observations, a few among many others of similar nature, direct attention anew to the importance of gastric acidity, to the factors that determine whether it is high or low, and to the means of bringing it within clinical control.

Gastric acidity is not simply determined by the secretory activity of the stomach alone, as is generally believed, for actively secreted gastric juice always has a high value.[9] To know what determines the final acidity of gastric juice, one should know what neutralizes the acid, once secreted, to the level, low or high, that is found clinically. This neutralizing mechanism, when faulty, leaves the gastric contents high in acid; when effective, it results in a low acidity or even in a complete anacidity. Two explanations are offered of this neutralizing mechanism: one, that gastric acidity is governed (neutralized) by factors intrinsic in the stomach itself, such as a diluting fluid or mucus; the other, that duodenal contents, notably the alkaline pancreatic juice by reflux into the stomach, is the important mechanism. Research at present is concerning itself with this problem, and already much evidence has been reported. Alkali by mouth may relieve symptoms by neutralizing for a time the high gastric acidity, but it effects merely a result and does not reach the cause of the disease. Perforation and hemorrhage, moreover, have been known to occur in spite of such treatment. A gastro-enterostomy, however, does in some still inadequately explained manner relieve symptoms in most cases. As long as the mechanism is unestablished, failures will continue to develop; failures, that is, not only in the relief of symptoms but, much worse, with the occasional development of a new ulcer at the operative stoma. As soon as it becomes possible to control gastric acidity, physicians will probably know how to influence the acid factor under pathologic conditions. On this basis a rational cure, medical, surgical or both, will be possible.

1. Dragstedt, L. R., and Matthews, W. B.: The Digestion of Living Tissues by Gastric and Pancreatic Juice, Am. J. Physiol. **105**: 29, 1933.

2. Steinberg, M. E.; Brougher, J. C., and Vidgoff, I. J.: Changes in Chemistry of the Contents of Stomach Following Gastric Operations, Arch. Surg. **15**: 749 (Nov.) 1927.

3. Mann, F. C., and Williamson, C. S.: The Experimental Production of Peptic Ulcer, Ann. Surg. **77**: 409 (April) 1923. Elman, Robert, and Hartmann, A. F.: Spontaneous Peptic Ulcers of Duodenum After Continued Loss of Total Pancreatic Juice, Arch. Surg. **23**: 1030 (Dec.) 1931.

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8. Palmer, W. L.: The Mechanism of Pain in Gastric and Duodenal Ulcers, Arch. Int. Med. **38**: 603 (Nov.) 1926; The Value of Acid Neutralization in the Treatment of Gastric and Duodenal Ulcers, ibid. **46**: 165 (Aug.) 1930; Studies on the Neutralization of the Gastric Acidity in the Treatment of Peptic Ulcer, Tr. Am. Gastroenterol. A., 1932, p. 123.

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# Current Comment

## STOP THE DUST

About forty years ago the late Dr. T. Mitchell Prudden published a small volume entitled "Dust and Its Dangers." The book was one of the pioneer efforts in this country to direct attention to the distribution of the ubiquitous bacteria, then only recently known as important unseen enemies of man. The menace of dust was presented as the danger of dissemination of baneful micro-organisms. If a contribution should be offered today under the same title it would stress additional and quite different features of harm. One cannot read the symposium of contributions on silicosis and other forms of pneumonoconiosis presented in a recent issue of THE JOURNAL [1] without realizing more fully how threatening the injurious effects produced in the lungs by the inhalation of unusual quantities of certain dusts have become. Aside from the possible development of fibroses there is the specter of the predisposition to infections such as pneumonia and pulmonary tuberculosis. There are cogent reasons why the dangers have become widespread. Next to oxygen, silicon is the most common element of the earth's crust. Free silica represents nearly 13 per cent, and in combined form the proportion present amounts to more than 42 per cent. There are admittedly many difficulties in the accurate diagnosis of the varied forms of pneumonoconiosis. These are being masked by such efforts as were reported in detail at the Milwaukee session of the American Medical Association. The diagnosis calls for a correlation of all the facts: symptoms, signs, occupational history, and laboratory and roentgen examinations. The normal lung contains scarcely more than 1 mg. of silicon dioxide per gram of dried tissue, whereas the lung tissues of persons exposed to dusty atmospheres of certain types may exhibit many times that amount. That is why, according to McNally,[1] a chemical examination of the lungs should be made in every case coming to necropsy in which there is a history of a dusty occupation. Silicosis is particularly menacing, whereas some of the organic dusts are less pathogenic. Pancoast [2] struck the proper keynote when he remarked that the great difficulty in this country with silicosis is the law and not the medical profession. We as physicians are a little lax because of a lack of thorough knowledge about it, but certainly our form of government is more at fault. We have to depend on every state passing some kind of compensation law for silicosis. The states have been slow in doing this; moreover, each one passes a different law, which upsets industry and brings about confusion. In more than one industry today the most important slogan in the "new deal," from the standpoint of welfare defined in terms of human health and comfort, would be Stop the Dust.

1. Sayers, R. R.: The Clinical Manifestations of Silicosis, J. A. M. A. **101**: 580 (Aug. 19) 1933. Lanza, A. J.: Etiology of Silicosis, ibid., p. 583. McNally, W. D.: Silicon Dioxide Content of Lungs in Health and Disease, p. 584. Pancoast, H. K., and Pendergrass, E. P.: Roentgenologic Aspect of Pneumonoconiosis and Its Differential Diagnosis, p. 587. Gardner, L. U.: The Pathologic Reaction in Various Pneumonoconioses, p. 594.

2. Pancoast, H. K., in discussion on silicosis, J. A. M. A. **101**: 593 (Aug. 19) 1933.

# Association News

## MEDICAL BROADCAST FOR THE WEEK

### American Medical Association Health Talks

The American Medical Association broadcasts on Tuesday and Thursday from 9:15 to 9:20 a. m., Chicago daylight saving time, which is one hour faster than central standard time, over Station WBBM (770 kilocycles, or 389.4 meters).

The subjects for the week are as follows:

Sept. 12. Hobbies.
Sept. 14. Arthritis.

There is also a fifteen minute talk sponsored by the Association on Saturday morning from 9:45 to 10 o'clock over Station WBBM.

The subject for the week is as follows:

Sept. 16. Minerals in the Diet.

# Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

## CALIFORNIA

**Library Building for County Society.**—The Los Angeles County Medical Association has announced its decision to start immediate construction of a library building and auditorium. The building, to be financed by an accumulated "permanent quarters fund" of about $300,000, will provide space for about 140,000 volumes, while the auditorium will have a seating capacity of more than 325. Last year the Barlow Library Medical Association presented the library to the county medical association on the latter's agreement that a building would be erected. The library will be transferred to the new structure on its completion, which is expected by the first of next year.

**Eye Swindlers Active Again.**—Two "eminent opticians said to be from Colorado Springs," who called themselves "Drs." John J. Harris and W. O. Wilson, recently received $112 in cash for "treatment" of a woman's eyes, in Santa Barbara. The impostors called on the woman after her return from a visit to her optician. The men refused a check for the "treatment" and succeeded in having the "patient" accompany them to the bank, where she gave them $112 in cash. Previous reports in THE JOURNAL describe the similar swindling activities of two men, one a "Dr. Harris," in Reading, Pa., and Huntsville, Ala.

## COLORADO

**Nursing School Closed.**—The University of Colorado School of Medicine closed its nursing school, June 15, for reasons of economy. The school had a faculty of twenty-two, exclusive of head nurses. It was established in 1898 and was suspended in June, 1922, but resumed operation in 1924. Students now in training will be allowed to complete their courses.

**University News.**—Dr. George S. Johnson, assistant director, Colorado Psychopathic Hospital, University of Colorado, has been appointed a professor of neuropsychiatry at Stanford University School of Medicine, effective September 1. Dr. Charles A. Rymer, resident psychiatrist at the hospital, has been appointed to succeed Dr. Johnson. Dr. Franklin G. Ebaugh, director of the hospital, will spend part of the next academic year as director of the division of psychiatric education of the National Committee for Mental Hygiene.

## DELAWARE

**Midwives in Delaware.**—Of 4,282 live births reported in Delaware in 1932, 19.2 per cent were attended by midwives and 80.4 per cent by physicians. There are 157 midwives registered and practicing in Delaware, 51 white and 106 colored. Fifty-nine are practicing in New Castle and Wilmington, forty-five in Kent County and fifty-three in Sussex County. All midwives are under the supervision of the state board of health and are allowed to apply for a license only on the recommendation of a physician.

## ILLINOIS

**Personal.** — Dr. Joseph A. Campbell, Marissa, has been appointed managing officer of the East Moline State Hospital, East Moline, succeeding Dr. Cyrus H. Anderson.

### Chicago

**Personal.**—Dr. David C. Straus has been appointed consultant in fractures and traumatic surgery in the recently created medical department of the Illinois Industrial Commission.——Dr. Frank S. Needham, Oak Park, is the first winner of the Vanderslice Cup of the Chicago Medical Society. The golf tournament was held at the Medinah Country Club, August 9. Dr. Needham's gross score was 80.

**Gift for the Advancement of Urology.**—Securities with a market value in excess of $300,000 have been transferred to Northwestern University Medical School by an anonymous donor, to be used for the advancement and improvement of the teaching of urology. The trustees have the right to invest this money and allocate the income to the designated purpose whenever it is considered sufficient to inaugurate a productive program.

## IOWA

**Dinner to Dr. Taylor.** — The Wapello County Medical Society will be host to members of the Ninth Councilor District and other invited guests at a complimentary dinner at the Wapello Club, Ottumwa, September 19, in honor of Dr. Charles B. Taylor, Ottumwa, president of the Iowa State Medical Society. Dr. Oliver J. Fay, Des Moines, will act as toastmaster, and speakers will include Drs. Daniel J. Glomset and John H. Peck, Des Moines; Fred M. Smith, Iowa City; Royal F. French, Marshalltown, and Murdock Bannister, Ottumwa.

**Twin Lakes District Meeting.**—Dr. James McAllister, Odebolt, was elected president of the Twin Lakes District Medical Society at its eleventh annual assembly at Burns' Alhambra Pavilion, near Rockwell City, July 13, and Dr. Paul W. Van Metre, Rockwell City, was reelected secretary. Speakers included Drs. David M. Berkman, Rochester, Minn., who gave an address entitled "Quo Vadis, Medico?" and Milford E. Barnes, Iowa City, "Public Milk Supply and the Public Health." Clinics were conducted by Drs. Howard L. Beye, Iowa City, in general surgery; Arthur Steindler, Iowa City, orthopedic surgery, and Fred M. Smith, Iowa City, medicine.

## KENTUCKY

**Personal.** — Sir Wilfred Thomason Grenfell delivered the commencement address at the ninety-sixth commencement of the University of Louisville, June 6; the honorary degree of doctor of science was conferred on him by the university.

**Society News.**—Drs. George A. Hendon and Philip F. Barbour, Louisville, presented a series of lectures at Cynthiana, July 27, sponsored by the Harrison County Medical Society. Subjects covered by Dr. Hendon included treatment of peptic ulcer, fracture of the hip, hernia and intestinal obstruction; by Dr. Barbour, eczema, asthma, rheumatism and communicable diseases.——Drs. Thomas M. and Samuel B. Marks, Lexington, addressed the Bourbon County Medical Society, Paris, July 20, on "Meningococcus Meningitis" and "Acute Laryngotracheal Bronchitis in Children," respectively.——Members of the Marion, Taylor, Green and Adair county medical societies met in Columbia, July 21; speakers were Drs. William O. Johnson and Frank P. Strickler, Louisville, on "Diagnosis and Treatment of Borderline Hyperthyroidism" and "Surgery of the Common Ducts," respectively.——Dr. William R. Miner, Covington, addressed the Grant County Medical Society, Williamstown, in June on hydronephrosis.——Speakers before the Third District Medical Society in Hopkinsville, June 21, were Dr. Paul S. York, Glasgow, on "Meningovascular Syphilis" and Drs. Frank M. and James R. Stites, Louisville, on "Medical Preparation for Urological Surgery" and "Surgical Care of Urological Patients," respectively.

## LOUISIANA

**New Appointments to Medical Board.**—Drs. George S. Bel, New Orleans, and Jackson J. Ayo, Raceland, were recently appointed to the Louisiana State Board of Medical Examiners, replacing Drs. Leon J. Menville, New Orleans, and James E. Knighton, Shreveport. The personnel of the present board is as follows: president, Dr. Bel; vice president, Dr. Robert W. O'Donnell, Monroe; Dr. Roy B. Harrison, New Orleans, secretary-treasurer; Dr. Edmund L. Leckert, New Orleans, and Dr. Ayo.

## MAINE

**Society News.**—The Somerset County Medical Association was addressed, June 15, at Lakewood by Drs. George E. Young, Skowhegan, and Paul Wakefield, Fairfield, on tuberculosis.—— The Tri-County Medical Society (Penobscot, Piscataquis and Somerset) was addressed, August 18, by Dr. Donald S. King, Boston, on "Developments in Treatment of Thoracic Diseases." Dr. Edwin T. Wyman, Boston, also spoke.

## MICHIGAN

**Peninsula Society Election.**—Dr. John J. Walch, Escanaba, was elected president of the Upper Peninsula Medical Society, August 11, and Dr. Frank G. Maloney, Ironwood, was named vice president. Selection of Ironwood as the place for the next annual convention makes the secretary of the Gogebic County Medical Society automatically secretary of the peninsula society, it was stated.

**Director of Tuberculosis Work Appointed.**—Dr. Bruce H. Douglas, for several years medical director and superintendent of the William H. Maybury Sanatorium, Northville, has been designated director of tuberculosis work for the Detroit Board of Health. Dr. Douglas will succeed Dr. Henry D. Chadwick, who has been appointed commissioner of health of Massachusetts, effective October 1. He is a 1921 graduate of Rush Medical College and has been associated with the Maybury Sanatorium since 1923.

## MISSISSIPPI

**Low Death Rate.**—There were 20,322 deaths recorded in 1932 in Mississippi, giving a rate of 9.9, the lowest ever recorded in the state per thousand of population. The total number of births in 1932 was 46,481 and the rate per thousand 22.6.

**Personal.**—Dr. Sanchez-Vigil, inspector general of sanitation, Nicaragua, Central America, is spending three and one-half months in Mississippi to study the laboratory and county health work of the state board of health. Following his study there, he plans to go to Johns Hopkins School of Hygiene and Public Health, Baltimore, to work toward a master's degree in public health. Ming-Ting Young of the National Health Administration, Nanking, China, spent two weeks, recently, with the state board of health, observing the sanitary engineering activities.

## MISSOURI

**The St. Louis Encephalitis Epidemic.**—Fatalities in the outbreak of encephalitis in St. Louis totaled seventy-one, September 4, while the number of reported patients was more than 480, newspapers stated. Ninety patients were under treatment at the isolation hospital on that date. A new ward to care for these patients has been opened at the hospital, with accommodations for fifty persons.

**Faculty Changes at St. Louis University.**—Dr. William H. Vogt, associate professor of gynecology and obstetrics at St. Louis University School of Medicine, has been made professor and director of the department. Drs. Edgar F. Schmitz and Edward Lee Dorsett, both of whom were formerly on the faculty, have been appointed associate professor of gynecology and obstetrics and assistant professor of gynecology, respectively. Dr. Solomon A. Weintraub has been promoted to assistant professor in this department. It was also announced that Dr. Leland B. Alford has been promoted to the rank of associate professor of neurology and psychiatry.

## NEW HAMPSHIRE

**Use of Pasteurized Milk Required.**—The state board of health has recently issued a regulation requiring that all milk and cream used in the manufacture of ice cream for sale to the public must have been subjected to the standard process of pasteurization.

**Deaths from Tuberculosis Reduced.**—Deaths from tuberculosis in New Hampshire were reduced from 241 in 1931 to 206 in 1932, the lowest number ever reported in the state. The death rate per 10,000 of population was 3.74. Of the total number, 176 were from tuberculosis of the respiratory system.

## NEW JERSEY

**Infantile Paralysis in Bergen County.**—School and health authorities decided to postpone the opening of the Fairmont School in Hackensack until September 14 because of an outbreak of infantile paralysis. About ten cases have been reported in the city, one fatal case in the Fairmont section of the city.

**Society News.**—The Society for the Relief of the Widows and Orphans of Medical Men of New Jersey paid out $5,000

in benefits during the year ended May 1, according to the recent annual report. The society, incorporated in 1882, collects assessments from each member when a member dies. Three fourths of the amount is sent immediately to the survivors and the remainder is placed in a permanent fund, which is used for relief of physicians' widows and orphans who are in need. Dr. Edward J. Ill, Newark, is president of the society.

## NEW MEXICO

**Personal.**—Dr. Cranford H. Douthirt, recently health officer of Union County, has been appointed director of county health work in the state bureau of public health.

**Society News.**—Dr. Wallace P. Martin addressed the Curry County Medical Society, Clovis, at the final meeting for the season in June, on tumors of the bone.——Approximately 100 persons in Rincon recently received inoculations against typhoid after a flood swept through the village. Forty persons were made homeless by the flood.

## NEW YORK

**Society News.**—Dr. Edward M. Livingston, New York, addressed the annual meeting of the third district branch of the Medical Society of the State of New York, September 5, at Catskill, on "Interpretation of Abdominal Signs and Symptoms: A Practical Study of Visceral Neurology."——Dr. Louis C. Kress, Buffalo, addressed the Medical Society of the County of Rockland, June 28, at Stony Point, on "Five-Year Cures in Cancer."

### New York City

**Curb Sale of Valerian.**—At the request of the police department, the board of health has instituted strict control measures over the sale of valerian or valerianate and all its derivatives in order to curb its use by gangsters and racketeers in stench bombs. No person other than a physician, a veterinarian or a pharmacist is permitted to sell the drug in the city, and only on prescription. Manufacturers are required to state the specific amount of the drug in each container or package of the drug or any proprietary medicine in which it is used. Both manufacturers and dispensing pharmacists must keep a complete record of all valerian or valerianate or any of its derivatives that pass through their hands.

**Health Demonstration Six Years Old.**—The Bellevue-Yorkville Health Demonstration, directed by the department of health and financed by the Milbank Memorial Fund, recently completed its sixth year. The annual report lists the projects established in that section, many of which have been since installed in other sections of the city. Among them are clinics for the preschool child, consultation chest service for private physicians, pneumothorax refill service, generalized nursing service, diagnostic cardiac clinics for children applying for work permits, and a mental hygiene service. Forty-four thousand families live in the Bellevue-Yorkville district. Dr. Margaret Witter Barnard is medical director of the demonstration.

**University News.**—New courses in roentgenology and radiation therapy will be given at New York Post-Graduate Medical School and Hospital during the coming academic year. The courses have been graded so that physicians may undertake from three to nine months of intensive progressive work. The first three months will be devoted to basic work, the second to clinical experience and the last to radiation therapy. Application is limited to graduate physicians in good standing either with internship in an approved hospital or with five years' active general practice with hospital and clinic experience. The maximum number of applicants accepted will be eight. Fees for the three divisions will be $250 each, or $700 for the nine months.

**Less Noise in the Subway.**—Engineers of the Interborough Rapid Transit Company have constructed a car in which the usual noise of the subway has been reduced from a level of about 95 decibels to about 75 decibels. They explain that the new level is about as quiet as the ordinary Pullman car, while that of the ordinary subway is equal to the noise of Niagara Falls at the closest point a visitor can reach. In the new car the windows are kept closed and all cracks are sealed. Forced ventilation is provided by power blowers, the air ducts being treated to prevent passage of noise through them. Dr. Shirley Wynne, commissioner of health, stated that the reduction of noise in the subway should lessen the nervous strain and other mental and physical ills believed to be caused by continual loud noise.

**Private Physicians and Examinations of School Children.**—The coordinating committee of the five county medical societies of the city of New York at a recent meeting agreed that it was desirable to stimulate action by the health department, the board of education and the medical profession on examination of children about to enter school for the first time, as required by the sanitary code. After conference with the health department it was decided that each society should urge private physicians to make the examinations. In other years a special form has been furnished by the department for physicians to send to parents suggesting the examination, but since budgetary restrictions have now made this impossible the committee suggested that the form be locally printed in each county.

**Lectures on Psychoanalysis.**—A course of eleven lectures for physicians on "Psychoanalysis in Medicine" will be presented at the New York Psychoanalytic Institute beginning October 5 and continuing on Thursdays except November 30. The lectures are as follows:

Dr. Clarence P. Oberndorf, History and Scope of Psychoanalysis; Psychopathology of Everyday Life; Sexual Theory.
Dr. Monroe A. Meyer, Interpretation of Dreams—Symbolism; General Theory of the Neuroses.
Dr. Dorian Feigenbaum, Conversion Hysteria.
Dr. Sandor Lorand, Anxiety Hysteria.
Dr. Philip R. Lehrman, The Compulsion Neurosis.
Dr. Gregory Zilboorg, Manic-Depressive Psychoses; Schizophrenic Psychoses; Psychoanalysis and Organic Disease.

Physicians may register with Dr. Monroe A. Meyer, New York Psychoanalytic Institute, 324 West Eighty-Sixth Street. The fee is $10.

## NORTH CAROLINA

**Course in Public Health.**—The University of North Carolina will offer a short course in public health during the first quarter of the coming year, it was recently announced. The schools of medicine, public administration and engineering and the graduate school will cooperate in arranging the course, which will be designed to meet practical needs of health officers and physicians who wish to enter public health work.

## OHIO

**Personal.**—Dr. Frank G. Boudreau, formerly chief of the division of communicable diseases of the state department of health, has recently been made acting chief of the Health Section of the League of Nations to serve during the absence of Dr. Ludwig Rajckman, head of the section, on an extended stay in China. Dr. Boudreau left the state health department in 1925 to join the staff of the health section as statistician-epidemiologist.

**Hospital News.**—St. Joseph's Hospital, Lorain, will close its nursing school after thirty years of service. Undergraduates will be transferred to St. Elizabeth's in Youngstown. ——Lima Memorial Hospital, Lima, a $550,000 structure with a capacity of 144 beds, was opened, May 30. Funds were provided by a bond issue of $600,000 authorized ten years ago. ——The Champaign County health office was recently closed for lack of operating funds. Dr. Lemuel A. Woodburn, Urbana, has been commissioner for five years.

**Fellowships Awarded.**—Western Reserve University School of Medicine recently announced the award of the Crile Foundation Fellowships, established several years ago by Dr. George W. Crile, professor emeritus of surgery, to enable promising students to do research during vacation months. The following students received fellowships in the departments indicated:

| | |
|---|---|
| George H. Gerlach, pharmacology. | Harry Edward King, biochemistry. |
| George Robert Krause, anatomy. | Donald Alanson Kelly, pathology. |
| Harold Victor Morley, anatomy. | Robert D. Mansfield, pathology. |
| Theodore S. Rosen, anatomy. | Irvine H. Marshall, pharmacology. |
| William F. Ashe, Jr., biochemistry. | Aladar Edgar Mako, histology. |
| Genevieve Delfs, anatomy. | Mary Ruth Oldt, pathology. |
| Ben Fisher, hygiene. | Kenton R. Phelps, physiology. |
| Sarah Mathiott Hindman, hygiene. | Eugene J. Stanton, pharmacology. |

## SOUTH DAKOTA

**Dr. Jenkins Reappointed.**—Dr. Park B. Jenkins, Waubay, has been reappointed superintendent of the South Dakota State Board of Health for a term of five years. Because of reduced appropriations the services of Dr. August E. Bostrom, De Smet, who had been state epidemiologist since July 1, 1929, were discontinued.

## TENNESSEE

**Personal.**—Drs. Waller S. Leathers and Owen H. Wilson, Nashville, and Edward Clay Mitchell, Memphis, have been appointed to the state public health council. Other members are Drs. Lloyd M. Graves, Memphis, and Thomas B. Yancey, Kingsport.——Dr. Harold M. Kelso, Gallatin, has been appointed health officer of Sumner County to succeed Dr. Geoffrey M. Morris.

**Society News.** — Dr. Burton L. Jacobs, Chattanooga, addressed the first fall meeting of the Hamilton County Medical Society, September 7, on "Postoperative Thrombophlebitis and Embolism."——Drs. Owen H. Williams, Savannah, and Jacob Alperin, Memphis, among others, addressed the Hardin-Lawrence-Lewis-Perry-Wayne Counties Medical Society, July 25, on "Neurotic Habits in Infancy and Childhood" and "Diabetes Mellitus," respectively.——Dr. John L. Hankins, Johnson City, spoke on roentgen therapy and Drs. Harry D. Miller and John G. Moss, Johnson City, on the clinical use of radium at the meeting of the Washington County Medical Society, September 7.

## VIRGINIA

**Hospital News.**—The Winchester Memorial Hospital has announced that its nursing school is to be discontinued this month. The school has been maintained for thirty years.

**University News.**—Mr. Paul Goodloe McIntire, Charlottesville, Va., has given to the University of Virginia School of Medicine $75,000 for the study and treatment of mental diseases and $100,000 for the study of cancer, the latter as a memorial to his wife.

**Personal.**—Dr. Wyndham B. Blanton, Richmond, received the honorary degree of doctor of literature from Hampden-Sidney College, in recognition of his work on the "History of Medicine in Virginia." —— Dr. Mildred Esther Scott, Kansas City, Kan., has been appointed physician to the State Teachers College, Fredericksburg.

**Changes at Medical College of Virginia.**—Dr. Jesse L. McElroy, superintendent of the hospital division of the Medical College of Virginia since 1929, has resigned to become superintendent of the American Hospital in Paris. Dr. Lewis E. Jarrett, senior assistant superintendent, has been named to succeed Dr. McElroy. Promotions among the faculty include the following:

Dr. Daniel D. Talley, Jr., to professor of roentgenology to succeed the late Dr. Alfred L. Gray.
Dr. William R. Bond to professor of physiology.
Dr. Harvey B. Haag to professor of pharmacology.
Dr. Robert H. Courtney to associate professor of ophthalmology.
Dr. Wyndham B. Blanton to professor of the history of medicine.

## WEST VIRGINIA

**New Plan for Mental Hospitals.** — The West Virginia State Medical Association is working out a plan with the governor and the state board of control to reorganize care of the mentally ill in state hospitals. It is planned to have a trained staff of psychiatrists and internists at one of the hospitals and to use the other two hospitals as custodial institutions for incurable patients. It is also proposed that medical appointments under state control be placed under civil service.

**Recent Appointments.** — Dr. Russell H. Paden, former director of the division of child hygiene of the state department of health, has been appointed superintendent of the State Home for Backward Children, St. Marys. Governor Kump has appointed Dr. John E. McQuain, Parkersburg, superintendent of the Spencer State Hospital at Spencer, succeeding Dr. Barrick S. Rankin. Dr. W. H. Post, Masontown, has been appointed superintendent of the Hopemont Tuberculosis Sanitarium to succeed Dr. George F. Evans. Dr. Albert M. Price, Madison, has been appointed director of the division of rural sanitation of the state health department, it is reported.

## GENERAL

**Increase in Quota of Medicinal Liquor.**—The bureau of internal revenue has authorized the manufacture of 7,000,000 gallons of medicinal liquor during the coming year. This is three and one-half times the amount permitted each year since 1929. The present supply was estimated at 11,000,000 gallons.

**News of Epidemics.**—Thirty-three cases of typhoid with five deaths have occurred among nuns in a convent in Montreal, Que., newspapers reported, August 24. The source of the epidemic had not been determined.——The Civilian Conservation Corps unit near Loudonville, Ohio, was quarantined, August 18, for scarlet fever. One definite case developed and six other members of the corps were isolated for observation. ——Fourteen cases of infantile paralysis were reported in Fayette County, Pa., between July 22 and August 18.

**Unauthorized Salesmen.**—Complaints have been received at the headquarters of the American Medical Association concerning salesmen who claim to represent the so-called "A. M. A. Sales Company, N. Dearborn St., Chicago, Ill." Mail bearing this address has been delivered to the American Medical Association, postal authorities apparently being unable to locate a firm by the name given. An order blank sent by a physician from Texas shows a subscription offer for three magazines for $10, of which $5 was to be paid with the order and $5 within sixty days. The man who visited him was 5 feet 11 inches tall; weight about 170 pounds; brunette with slightly curly hair; close shaven; dark eyes; about 35 to 40 years old. Accredited representatives of the American Medical Association carry credentials signed by Dr. Olin West, Secretary and General Manager. Physicians are warned not to accept any person as a representative of the association unless he presents this identification.

**Pedlers of Jamaica Ginger Convicted.**—Three pedlers of the jamaica ginger that caused an outbreak of paralysis in Los Angeles early in 1931 were recently convicted by the government. Two were sentenced to pay fines of $2,500 each and serve twenty months in jail and the other to spend seventeen months in prison. All were charged with conspiracy to violate the federal Food and Drugs Act and convicted in the federal court of Brooklyn, Dec. 30, 1932. They appealed the case and were released under $10,000 bonds, but the U. S. Circuit Court of Appeals affirmed the conviction. The Food and Drug Administration investigated operations of the racketeers for more than two years before sufficient evidence was collected to identify the persons responsible for shipping poisonous "fluid extract of ginger" in interstate commerce. For the most part the extract was taken as an intoxicant, though some persons took it allegedly for medicine. Barrels of the poison were labeled "fluid medicine." In a previous prosecution one member of a firm in Boston which was said to have shipped ginger extract that caused an epidemic in 1930 received a prison term and the concern was fined $1,000.

**Bequests and Donations.** — The following bequests and donations have recently been announced:

St. Vincent's Hospital, New York, and the Hawthorne (N. Y.) hospital of the Sisters for Relief of Incurable Cancer, $2,000 each under the will of the late Rose C. Newman.

New Rochelle (N. Y.) Hospital and the Hospital of the Sisters for Relief of Incurable Cancer at Hawthorne, $5,000 each under the will of the late James R. Merrill.

Presbyterian Hospital, New York, $7,500, and New York Orthopedic Dispensary and Hospital, $2,500 by the will of the late Mrs. Bertha H. Minturn.

St. Luke's, New York Foundling and Seton hospitals and New York Society for the Relief of the Ruptured and Crippled, all of New York, and St. Joseph's Hospital, Yonkers, $10,000 each by the will of the late Giulia P. Morosini.

New Haven Hospital, New Haven, Conn., $100,000 from the estate of Miss Jeannie Taylor Kingsley.

Milford Hospital, Milford, Mass., $10,000 by the will of Mrs. Helen Draper Ayer.

Presbyterian and New York hospitals, New York; Grace and Receiving hospitals, Detroit, $187,814 each by the will of Stewart Hill Jones.

Harlem Eye and Ear Hospital, $25,000, and St. Luke's Hospital, New York, $15,000 by the will of the late William T. Koch.

Grasslands Hospital, Valhalla, $50,000 bequeathed by the late Charles Edy Monroe.

New York Hospital, $5,000 under the will of the late Miss Helen Jay Garretson.

**Medical Papers on Chemists' Program.**—Among papers of medical interest on the program of the meeting of the American Chemical Society in Chicago, September 10-15, will be the following:

Henry C. Sherman, Ph.D., New York, A Century of Progress in the Chemistry of Nutrition.
W. Fred Oberst, Ph.D., and Dr. Everett D. Plass, Iowa City, Variations in the Hydrogen Ion Concentration of Human Vaginal Discharge.
Martin E. Hanke, Ph.D., Chicago, Acid Base Metabolism of the Stomach and Pancreas.
George L. Clark, Ph.D., Urbana, Ill., and Paul F. Ziegler, Chicago, X-Ray Diffraction Researches on Surgical Catgut Ligatures.
Edward A. Doisy, Ph.D., D. W. Maccorquodale, Ph.D., and Sidney A. Thayer, Ph.D., St. Louis, Estrogenic Activity of Some Oxidative Derivatives of Theelin and Theelol.
Dr. James B. Collip, L. I. Pugsley and Evelyn M. Anderson, Montreal, Effect of the Thyreotropic Hormone and of Desiccated Thyroid on the Creatine and Creatinine Excretion of the Rat.
Casimir Funk, Rueil-Malmaison, France, New Metabolic Hormones and the Nature of Intermediate Products formed in the Organism under Their Influence.

Dr. Richard Wilstätter, Munich, Germany, will receive the Willard Gibbs Medal of the Chicago Section, Wednesday evening, September 13. Dr. Wilstätter will give his technical address Thursday afternoon on "Recent Problems in the Nature of Enzymes."

## CANADA

**Personal.**—Lieut.-Col. John Andrew Amyot, deputy minister of pensions and national health, has retired. Dr. Amyot was made deputy minister of health in 1919, after eighteen years' service as director of the provincial health department of Ontario, and when the department of pensions was combined with the federal health department in 1928 he became deputy minister of the joint department.

**Society News.** — Dr. Alphonse Lessard, director of the Bureau of Health and Public Charities of Quebec, was elected president of the Canadian Public Health Association at the annual meeting in St. John, New Brunswick, June 19-21. Vice

presidents are Drs. Frederick W. Jackson, Winnipeg; John G. Fitzgerald, Toronto, and John W. McIntosh, Vancouver.——Dr. John Sinclair McEachern, Calgary, Alta., was chosen president-elect of the Canadian Medical Association at the annual meeting at St. John, N. B., in June. Dr. George A. B. Addy, St. John, assumed the presidency, succeeding Dr. Alexander Primrose, Toronto. The 1934 annual session will be held in Calgary in June.——Dr. W. S. Turnbull, Vancouver, was elected president of the British Columbia Medical Association, and Dr. Ethlyn Trapp, New Westminster, secretary, at the recent annual meeting.——Dr. Tanemoto Furuhata, professor of legal medicine, Kanazawa University of Medicine, Kanazawa, Japan, addressed the Vancouver Medical Association, June 8, on "Heredity of Blood Groups and Its Application to Forensic Medicine."——Dr. Robert Muir, Glasgow, Scotland, was the guest of honor at a special dinner meeting of the Halifax branch of the Medical Society of Nova Scotia, July 5, speaking on cancer.

**Chiropractor Forbidden to Use "Doctor" in Title.**—The use of the term "doctor" by a chiropractor is a violation of the medical law of Quebec, a justice of the superior court decided in a recent test case to determine the rights of chiropractors in the province. According to the Montreal *Gazette*, the decision brought to a head a long fight between physicians and those who practice in ways not considered competent by the medical profession. J. E. Lesage, the chiropractor in the case, was sentenced to pay a fine of $200 or go to jail for sixty days for having described himself as a "doctor of chiropractic." The case was appealed. The justice discounted the argument of the defendant that he did not practice medicine because doctors of medicine do not recognize chiropractic methods, declaring that the law forbids all persons to care for the sick unless they are doctors of medicine. In answer to another argument that, since diagnosis is the essence of practice and since the chiropractor does not diagnose, he therefore does not practice medicine, the justice said:

> The chiropractor, it is true, does not diagnose for each of the clients on whom, or against whom—I do not know which word is more exact—he applies his methods, but the reason is that according to him, the whole of humanity suffers from the same evil, that is, a displacement or deviation of the vertebrae, which is the cause of all maladies! The diagnosis of each one is already made.

## FOREIGN

**Surgical Clinic to Be Reopened.**—The University Surgical Clinic in Berlin, Ziegelstrasse, of which Professor Bier was the last director and which was closed some time ago (THE JOURNAL, Nov. 28, 1931, p. 1640), only a restricted policlinical service being preserved, is, according to a decision of the new government, to be reopened. The names proposed by the university medical faculty for the new chair are: (1) M. Kirschner, Tübingen; (2) V. Schmieden, Frankfort-on-Main, and (3) H. von Haberer, Cologne.

**Exhibit of Hobbies.**—A feature of the annual session of the British Medical Association in Dublin was an exhibit of hobbies of Irish physicians, arranged by Dr. F. S. Bourke and displayed in Trinity College. There were 251 exhibits by fifty-one exhibitors. The largest number of exhibitors had collected Irish antiques, the *British Medical Journal* reports. Some had gathered up stone axes, flint arrowheads and other evidences of prehistoric civilization in Ireland, others displayed collections of utensils and implements used in primitive folk life and still others old coins and medals. There were sporting trophies and souvenirs of war, the latter including many articles made from shells, bullets and cartridges. The exhibition also included art work by various physicians, collections of books and a notable mezzotint portrait of Robert Adair, an eighteenth century Dublin surgeon said to have been the original of the song "Robin Adair."

**Loud Auto Horns Prohibited in Paris.**—The prefect of police of Paris, France, has forbidden all other instruments of noise on automobiles except a horn of low pitch and a single note. According to the Chicago *Tribune*, this was in consideration of a letter to the police department from an official of the Society for the Suppression of Noise, which read as follows:

> Experience has demonstrated that horn blowing is rarely, if ever, necessary at all in the city and that mechanical and loud horns should be totally suppressed. Any motorist who attempts to cross an intersecting thoroughfare at full speed, relying solely on his horn, risks a serious accident. If he slackens his pace and looks to right and left, surely the horn is superfluous.
>
> We are convinced that nine times out of ten when a loud blast from an unseen vehicle is heard by the driver of a given vehicle, it is quite impossible for the latter to decide from which direction the warning has come. Yet fifty unoffending citizens have had their hearing outraged and their nerves lacerated for nothing.
>
> The usual reason given for sounding the horn is the wish to pass another car. But when the car in front is already proceeding at sufficiently high speed, this racing propensity should be sternly discouraged in town streets, as a large percentage of accidents is due to this practice.

# *Government Services*

### Navy Officers Promoted to Rear Admiral

Capt. Middleton Stuart Elliott and Capt. James Chambers Pryor of the Navy Medical Corps have been promoted to the rank of rear admiral to fill vacancies resulting from the retirement of Rear Admiral Charles E. Riggs, former surgeon general, and Rear Admiral Arthur W. Dunbar, October 1. Captain Elliott, a member of the Naval Retiring Board and Board of Medical Examiners of the Navy Department, is a native of South Carolina and has served in command of naval hospitals in Washington, D. C., Mare Island, Calif., and Canacao, P. I. In 1927 he was assigned to the Puget Sound Navy Yard and in 1930 was made district medical officer of the eleventh district, San Diego. Captain Pryor, at present medical officer of the first district, Boston, is a Tennessean and has served at various times at the Naval Medical School and the Naval Hospital in Washington, D. C., the Norfolk Navy Yard, the Naval Hospital at Annapolis and as fleet surgeon and aid on the staff of the commander of the United States fleet.

### Change of Station in the Navy

Comdr. George C. Rhoades, from naval air station, Norfolk, Va., to U. S. S. *Ranger*.

Comdr. Paul T. Dessez, from civilian conservation corps, to his home.

Comdr. Howard A. Tribou, from naval hospital, Boston, to Army Industrial College, Washington, D. C., as instructor.

Lieut. Comdr. Walter A. Fort, from thirteenth naval district to naval hospital, Mare Island, Calif.

Lieut. Norris M. Hardisty, from naval station, Guantanamo Bay, Cuba, to naval medical school, Washington, D. C., as instructor.

Lieut. Charles W. Shilling, from Harvard University School of Public Health, Cambridge, Mass., to navy yard, Washington, D. C.

Lieut. Clarence Minnema, resigned, from civilian conservation corps.

Lieut. Comdr. William F. Kennedy, from U. S. S. *Salt Lake City* to naval hospital, San Diego, Calif.

Lieut. Lloyd L. Edmisten, from naval hospital, Great Lakes, Ill., to naval hospital, San Diego.

Lieut. Ocie B. Morrison, Jr., from naval ordnance plant, South Charleston, W.Va., to naval station, Guantanamo Bay, Cuba.

Lieut. David H. Davis, from U. S. S. *Tutuila* to fourth regiment, U. S. Marines, China.

Lieut. Thenton D. Boaz, from fourth regiment, U. S. Marines, China, to U. S. S. *Tutuila*.

### Army Personals

Lieut. Col. Harley J. Hallett, relieved at Fort Humphreys, Va., and assigned to the Hawaiian Department.

Major Gerald D. France, relieved at Fort Bliss, Texas, and assigned to the Hawaiian Department.

Majors Harold W. Kinderman and John G. Knauer, relieved at Walter Reed General Hospital, Washington, D. C., and assigned to Balboa Heights, Canal Zone.

Major Samuel D. Avery, relieved at Walter Reed General Hospital and assigned to the Philippine Department.

First Lieut. Lewis Barbako, having been examined for promotion and found physically disqualified for the duties of captain by reason of disability incident to the service, his retirement is announced.

First Lieut. Robert Purcell Rea (reserve) appointed with similar rank to medical corps, regular army.

Capts. William McFarland and Harry Greeno, having been found by an army retiring board incapacitated for active service on account of disability incident thereto, their retirement is announced.

Capt. Robert E. Bitner, relieved at Fort Riley and assigned to the Panama Canal Department.

Capt. William F. Coleman, Fort Leavenworth, Kansas, will proceed to his home and await retirement, for the convenience of the government.

Capt. Ray H. Skaggs, relieved at Walter Reed General Hospital, Washington, D. C., and assigned at Randolph Field, Texas.

Major William S. Prout, relieved at U. S. Military Academy, West Point, N. Y., and assigned to the Hawaiian Department.

### Find Poisons Improperly Labeled

A recent survey of poisonous chemical compounds sold by dealers in the District of Columbia indicated that a large proportion of these substances now on sale do not comply with the federal caustic poison law, W. G. Campbell, chief of the Food and Drug Administration, announced. Early this year, inspectors of the administration visited dealers in the district and informed them as to the labeling requirement. Later official samples of caustic poisons were obtained from eighty-five dealers. Fifty-eight of these samples were either not labeled properly or carried no labels at all. Preliminary hearings are now being held in Washington which may lead to prosecution of some of the dealers for violations of the caustic poison act, Mr. Campbell said. Results of this survey suggest that dealers in other cities are probably selling poisons without labels showing their dangerous nature.

# Foreign Letters

## LONDON

*(From Our Regular Correspondent)*

Aug. 21, 1933.

### Breakdown of the National Health Insurance System

The socialist party in this country has one remedy for every ill—state expenditure. But that this produces more evil than it remedies they will not see, even when the country is brought to the brink of ruin, as it was by the socialist government. The prolonged unemployment, largely the result of their policy, has caused in some cases a breakdown of the system of contributions for the financing of the national health insurance system. Their remedy was easy: the state made good the deficiency. But after the financial crisis, which led to the downfall of the socialists, the new government decided to bring to an end this arrangement, which kept in the insurance system persons no longer qualified by contributions. It was provided that all insured persons who had been continuously unemployed for a period of two years and nine months would at the end of 1933 cease to be entitled to medical benefit. The government estimated that the number of persons so affected would be 100,000, but the continuance of the depression may well cause that figure to be exceeded. The insurance committees are deeply concerned and at their annual meeting it was pointed out that "these unfortunate people must in future rely upon the resources of public assistance." But in the distressed areas the resources for this purpose are already strained to the uttermost. The committees therefore suggest that the government should find the money or that the insurance funds might meet the cost by a small adjustment of the central fund. On the other hand, the government desires "to preserve the sanctity of the insurance principle." It may be pointed out that in any case "the insurance principle" is only partial, for normally a much greater part of the cost is provided by contributions from the government and the employers than from those who benefit by the system. As has been frequently pointed out, the so-called insurance system is more socialistic than anything else and, like all socialism, fails financially and makes constant demands on the state.

### England and the German Persecution of Physicians

The organization of the Academic Assistance Council to assist teachers and investigators "who on grounds of religion, political opinion or race are unable to carry on work in their own country" has been reported in a previous letter. This formula brings out the fact that the German persecution is not directed against the Jews alone but against all persons of pacifist or liberal views. If there is one thing to which an Englishman is more attached than another, it is the liberty of the individual to think as he likes in all matters, and especially in religion and politics; and if there is one thing more hateful to him than another, it is the oppression of any individual or class because of opinions held. Hence a revolution has taken place in this country's attitude toward Germany. The war and, what is more important, the responsibility for the war, were being forgotten and sympathy was being aroused for the difficulties in which Germany found herself. Now this good will has been dissipated and a feeling of revulsion and distrust has taken its place. England has always been the refuge of people persecuted abroad for their religious or political views, and the desire to help the victims of persecution is as great as ever, but unfortunately the difficulties at the present time are also great. The country is struggling with an industrial depression unprecedented in living memory, and the medical profession is detrimentally affected. Means are being taken to enable teachers and investigators to continue their work in this country. British hospitals and medical schools are doing their best to enable researches that have been interrupted to be continued. Perhaps the most eminent of the refugees is Dr. Fraenckel of Berlin, whose work on cancer has given him an international reputation. Westminster Hospital has placed its pathologic laboratory at his disposal, and he is doing research work there. But it is not easy to see how places can be found for practicing physicians. It is estimated that about 1,000 have arrived and that they continue to come at the rate of three or four a week. Many are enrolling in the universities or medical colleges to qualify for the right to practice in Great Britain or the dominions.

### Radium Treatment of Malignant Disease of the Eye

In a prize essay published in the *British Journal of Ophthalmology*, H. B. Stallard reports the results obtained at St. Bartholomew's and Moorfields hospitals in the treatment of malignant disease of the eye by radium. In one case a child, aged 5 months, in 1925, had its left eye excised for glioma. In 1929 a glioma was found in the upper nasal quadrant of the right eye and on November 15 a radon seed of 3 millicurie strength was inserted into the growth through a scleral incision. By November 26 the whole growth had shrunk and the seed was removed. Later radon treatment was repeated because it was feared that recurrence had taken place and also high voltage roentgen therapy because intracranial extension was feared. In November, 1932, vision had improved and there were no signs of recurrence. The conclusion is drawn that the glioma was destroyed by the first operation and that the subsequent measures were unnecessary. In another case of bilateral glaucoma the second eye was treated with radon seeds, but the attached thread was brought through the conjunctiva instead of being buried beneath it and to this is attributed the disaster of panophthalmitis, which followed. In two other cases the eye had to be excised but there was pathologic evidence of arrest of growth.

Three cases of sarcoma of the choroid were treated with radium. In a man of 65 the growth shrank and three and one-half years later there was no evidence of extension or metastasis. In the other two the growth was partially destroyed but the eye had to be excised. In two cases of sarcoma of the iris, radium applied through the closed lids appeared to have reduced the size of the growth eighteen months later. In a second case it was unsuccessful and in a third the diagnosis was doubtful.

Stallard concludes that sarcoma of the uveal tract and glioma retinae can be destroyed by radium. The best method is interstitial insertion of the seed into the growth. Suturing of radon seeds to the sclera and other methods are less effective and likely to injure the eye. At the London Radium Institute, malignant epibulbar growths have given satisfactory results to unscreened radium contained in plates of monel metal. Four out of six cases of malignant growth of the orbit did well, but when the growth affects the bony walls success is rare. Radium treatment of diseases of the eye should not be lightly undertaken, for there is always the danger of producing cataract, corneal necrosis or panophthalmitis.

### The Public Health

A continued improvement in the public health is shown in the report of the Ministry of Health for 1932-1933, just published. The death rate from tuberculosis is only 69 per thousand deaths from all causes, compared with 92 in 1923. The infant mortality is 65 per thousand births, compared with an average of 72 for the years 1921-1930.

#### THE UNDECLINING MATERNAL MORTALITY

But the maternal mortality remains obstinately high, though every effort is made to reduce it. The deaths per thousand live births during 1932 were 4.21, as compared with 4.11 in 1931. The rate for 1932 was lower than those for the three preceding years, which were: 1928, 4.42; 1929, 4.33; 1930, 4.40.

An attempt was made to attribute the slight increase of 1932 to "a dangerous desire to economize" on the part of the government. But the minister of health has pointed out that it is not possible to attribute these small variations in the yearly rate to any specific causes or, indeed, to assign to them any statistical significance. As a matter of fact the number of antenatal clinics in England increased by eighty-four during 1932, making a total of 1,277, and there was also an addition of 274 maternity beds. But the minister finds it a matter of concern that, though the maternal mortality shows no increase of statistical significance, it has not shown the same marked and satisfactory fall as has been observed of late years in the general death rate and notably in the infant mortality rate.

### A New Method of Photographing Finger Prints

A new method of photographing finger prints has been devised by Prof. H. L. Brose and Mr. C. G. Winson of the physics department of University College, Nottingham, working with local criminal investigation departments. In the method commonly used, the background interferes to some extent with the finger impressions. The new method involves the use of phosphorescent powders and only the phosphorescent light from the finger prints is used. The result is that a photograph without traces of background is obtained. Fluorescent powders have also been used successfully, but with greater difficulty.

## PARIS

*(From Our Regular Correspondent)*

July 26, 1933.

### Medical Congress in Algeria

The Fédération des sociétés médicales d'Algérie met recently in Algiers, under the chairmanship of Professor Tournade, for the third time since its foundation. Through the adhesion of the medical societies of Tunisia, it became the Fédération des sociétés algériennes et tunisiennes, which constitutes a very important scientific group for all of northern Africa that is under French control. Only Morocco is lacking. The main objective of the session was to study tuberculosis in those vast regions in which the native population is predominant and in which tuberculosis causes many deaths by reason of the unwillingness of the Mussulmans to accept the principles of modern hygiene. Eight papers were presented on this topic. Dr. Sergent, director of the Institut Pasteur in Algiers, pointed out that, by means of skin reactions to tuberculin, it has been shown that tuberculosis is becoming every year more prevalent among the natives, this fact being evident even in the most distant regions of the oases of the Sahara, the incidence increasing with more extensive contacts with Europeans. Dr. Argenson concluded that the climate of Algiers, although hotter, is not extremely different from that of Paris, and that the example of a neighboring country, Egypt, proves that tuberculous patients can be properly cared for in Algeria. The clinical point of view was discussed in three papers: that of Professor Gillot of Algiers and Dr. Sarrouy, on "Tuberculosis in the native children of Algeria"; that of Dr. Lévy-Valensi, on "Pulmonary tuberculosis in native adults of Algeria." Two conclusions may be deduced from these papers: the gravity of tuberculosis in Algerian natives, and the rapidity of the evolution of the symptoms. Professor Lombard of Algiers discussed the treatment of tuberculosis of the bones and joints and of the lympatic glands, in Algeria. This paper was followed by the presentation of a film that showed the Matifou Preventorium and the heliotherapeutic service in Douéra. The crusade against tuberculosis in Tunisia was discussed by Dr. Mazères of Tunis, and the organization of the crusade against tuberculosis in Morocco by Drs. Colombani and Lapin of Morocco. The following conclusions were reached: (1) Tuberculosis is developing rapidly among the natives of northern Africa; (2) the existing antituberculosis endeavors must be strenghtened; (3) by reason of the climate, it does not appear feasible to establish, in northern Africa, sanatoriums properly so called; but it is necessary to create hospitals for treatment. Several invited guests delivered addresses: Professor Mauriac of Bordeaux, on "Le malaise scientifique ou 'l'intelligence a l'uniforme'"; Professor Weinberg, of the Institut Pasteur, Paris, on "The Antigangrene Serum and Its Use in Therapeutics"; Professor Mouriquand of Lyons, on "The Syndromes of Nonassimilation: Their Clinical and Biologic Aspects"; Dr. Forestier of Paris, on "The Radiologic Applications of Iodized Oil"; Professor Constantini of Algiers, on "Nontuberculous Pulmonary Suppurations." A film on smallpox in northern Africa, presented by Dr. Mazères of Tunisia, closed the series of addresses. The next session of the federation will be held at Tunis, in 1934, under the honorary chairmanship of Professor Nicolle.

### Study of Heart and Lungs by Means of Cinematographic Radiography

Cinematographic radiography, as used by Prof. Léon Bernard, has already rendered good service for the study of the movements of the lung. Ravina and Cottenot have demonstrated, before the Société des médecins des hôpitaux de Paris, that the method will also contribute to knowledge of the heart's action. They performed experiments on anesthetized dogs by injecting opaque substances into the auricle by means of a sound introduced into the external jugular vein. With the aid of a special apparatus, they were able to roentgenograph the heart in systole or in diastole. The images secured show that in systole the auricle appears almost vertical, while the ventricle resembles a horn in shape, and the pulmonary artery appears distended. In diastole, the heart changes its form; the ventricle becomes roundish; the auricle stretches itself out, and the pulmonary artery is less dilated. In right lateral decubitus, even the closing of the auriculoventricular orifices can be observed.

### Growth of Blood Transfusion

In France the development of blood transfusion as a public service has been slow and difficult. Such a service did not become possible until a group of charitable women secured from Mr. Mourier, director of public assistance in Paris, the necessary authority to establish a special service in the Hôpital St. Antoine, the administrative costs of which were paid through the contributions of the members of the society. When, with the more extensive development of the service, the funds furnished by the society became insufficient, Mr. Mourier extended financial aid in increasing amounts. The last meeting of the association furnished evidence of the progress that the service has constantly made. A close collaboration exists today between the private society and the administration of public assistance. At present, all the hospitals controlled by the public assistance administration have recourse to the aid of this service, and, in addition, the Maison de santé des Gardiens de la paix, the Clinique de Martel, the Hôpital Rothschild, the American Hospital, and the English Hospital. The following figures show the growth of the service during the past four years: in 1929, 220 transfusions were effected; in 1930, 779; in 1931, 2,038, and in 1932, 3,738, or an average, in 1932, of more than 10 daily. This service, in order to be practicable and prompt, presupposes a perfect organization: the recruiting and medical examination of donors, classification of their record cards, matters of guardianship, repeated telephone calls for each transfusion, inspections in the hospitals, verification of each certificate of transfusion—these are the chief functions associated with the new service at St. Antoine. As the result of a decision reached by Mr. Mourier, henceforth all donors' fees in connection with transfusions performed in the various hospitals will be regulated by the public assistance administration, which assumes also

other charges: fees paid to donors, fees for work among the poor, 50 per cent of the fees for the transfusions performed at the Maison de santé des Gardiens de la paix, traveling expenses of the donors, and expenditures for instruments and general administration. Many cities of France and many foreign cities have requested information with a view to organizing similar centers. In some emergency cases, donors have been summoned by radio and have been transported by airplane.

### Medical Supervision of Sports in the Schools

Although the minister of public instruction favors physical education and the pursuit of sports in the schools and universities, it is peculiar that he has not until recently favored medical supervision of sports. His intentions are excellent, but he has always deferred creating the needed organization. The Comité Olympique français and the Comité national des sports recently delegated one of their members, Dr. Collet, to present to the minister a complete report on the subject. In his report, Dr. Collet advances the principle that physical education and sport activities should be provided for in the curriculum of all institutions of learning and that they should remain constantly under medical control, which, thus far, has been unorganized. He recommends that a medical examination be made at the opening of school every year, and that several examinations be made during the year, particularly before every important competitive event, and that the results of these examinations be registered on record cards. It is important to determine, for each kind of sport, the types of pupils that may, with profit, participate. Participation in sport contests should be prohibited unless preceded by a favorable medical examination. The main purpose of the medical examination, at the opening of the school year, is the detection of bad cases, and the results should be communicated to the family physician of the pupil or student, in order not to embarrass the position of that physician. A certificate entitling the holder to participate in university sports should be denied to applicants under 18 and more than 27 years of age. The certificate should be issued by the head of the university. The federations of athletic associations (fédérations sportives) will not accept for an athletic event any candidate who fails to satisfy these conditions.

## BERLIN

*(From Our Regular Correspondent)*

July 31, 1933.

### Sterilization to Improve the Race

The federal cabinet has enacted a law for the prevention of offspring with serious hereditary defects, which has been anticipated for some time. With this law, a fundamental idea of the national-socialist party, with respect to eugenics, has been put forward. The new law is framed to aid in the elimination of offspring with marked hereditary defects and thus to promote a racial improvement. The negative measures for the prevention of offspring with serious hereditary defects will be followed by positive legislative measures for the protection of families with sound hereditary attributes, and particularly the families with many children.

In the explanations that accompany the law will be found the following passage: "Whereas the families with sound hereditary attributes have, for the most part, adopted the system of one or no children, countless individuals of inferior type and possessing serious hereditary defects are propagating unchecked, with the result that their diseased progeny becomes a burden to society and is threatening, within three generations, to overwhelm completely the valuable strata. Since sterilization is the only sure means of preventing the further hereditary transmission of mental disease and serious defects, this law must be regarded as an evidence of brotherly love and of watchfulness over the welfare of the coming generation. The law cannot be so far reaching as to include all persons with defects; particularly, not all the milder cases of mental disturbance, nor the healthy bearers of hereditary disorders. It aims to reach only the pathologic groups that, on the basis of the recognized rules of hereditary transmission, will, in all probability, produce progeny characterized by serious hereditary defects."

The law provides that a person who has transmissible hereditary defects may be sterilized by surgical intervention if, according to the experiences of medical science, it is to be expected that his offspring will suffer from severe bodily or mental hereditary injuries. As hereditary diseases in this sense are to be regarded: congenital weakmindedness, schizophrenia, circular (manic-depressive) insanity, hereditary epilepsy, hereditary chorea minor, hereditary blindness, hereditary deafness, severe hereditary bodily deformities. Of especial importance is the regulation that sterilization can be performed on persons who are suffering from severe alcoholism. In the case of drunkenness, however, the authorities will confine their attention to the severe types with which is associated bodily or mental inferiority, so that offspring from such persons cannot, for numerous reasons, appear desirable. Through this enumeration and the restriction to disorders that can be regarded as adequately investigated, the objection is met, as is expressly emphasized, that valuable biologic material may be unwittingly destroyed.

The request for sterilization can be made by the person to be sterilized or by his legal representative, in which connection it is emphasized that laymen must bring a certificate stating that they have been enlightened by a physician concerning the significance and consequences of the intervention. In the interest of society, the health officer or the director of so-called closed institutions may file a request for mental patients.

To decide on such requests, so-called hereditary health courts will be created, which will consist of a judge as chairman, a health officer and another physician who has an adequate knowledge of the theory and teachings of hereditary health. The transactions are not public. Physicians are under obligations to supply evidence without reference to the right of privileged communication. An appeal may be taken from a decision. The intervention will be performed by physicians specially chosen for the purpose by the government. The operation will be done in a hospital but not by the physician who filed the request or who participated in the court examination. If the sterilization has been definitely decided on, the measure can, if necessary, be compulsorily enforced, provided the request for sterilization was not made exclusively by the person to be sterilized.

The expense of the court procedure is borne by the central government. Since, in many instances, the krankenkassen and the welfare league will be saved, in the future, considerable expense by a proper enforcement of the law, they will be expected to bear the burden of the additional expenditures for the medical intervention. In all other cases the central government will bear, up to the amount of the minimal fees of the medical fee schedule, the hospital expenses and the physician's fees, since, as a rule, no guilt attaches to the person to be sterilized.

Sterilization that is not performed in accordance with the provisions of this law (that is, sterilization on the basis of social indications) is punishable according to the regulations pertaining to the infliction of bodily injury, unless it is performed by a physician, with the consent of the person sterilized, for the warding off of serious danger to health and life.

The castration of violent criminals has not been incorporated in the new law, the idea being to avoid the impression that sterilization is a punishment. That is, however, not to be taken as evidence that castration of criminals has been abandoned; for it is planned to put such castration into practice with the beginning of the coming year. In this connection, attention is called especially to the difference between sterilization and cas-

tration. Sterilization is a purely external intervention without any health disturbing or functional results, whereas in castration the generative glands are removed.

The new sterilization law goes into effect, Jan. 1, 1934. The fundamental idea is to associate the order for sterilization with objective factors and with a judicial procedure protected by many guaranties at law. The personal desire to be sterilized, in itself, cannot and must not be considered as important. The danger that persons with such desires, born of the endeavor to secure unrestrained sexual gratification without fear of consequences, might find all too easily a willing surgeon, as well as other possible abuses, has been studiously avoided.

In Hamburg, castration for persons guilty of crimes against good morals is already provided for by law. In order effectively to protect children and juveniles of both sexes against violators of laws upholding good morals, who nearly always become repeaters, the police authorities of Hamburg have decreed that all criminal violators of moral laws, who have been duly sentenced according to law and have become a menace owing to repetition of such crimes, or who, it is feared, will repeat their crimes, must, on dismissal from a penal institution, be taken into custody and transferred to a concentration camp. They may be released from such custody if, following a hearing before official medical experts, preceding their dismissal from the penal institution or immediately thereafter, they voluntarily, or on the advice of duly constituted authorities, consent to the performance of castration in a government hospital.

### Marriages Between Relatives

Greater attention than formerly is being paid to the question of marriages in which the contracting parties are blood relatives. Professor Lenz, an investigator in problems of heredity, of Munich, discusses in the *Münchener medizinische Wochenschrift* the questions as to whether there are any reliable statistics on the dangers connected with the marriage of blood relatives, and as to what the effects are on posterity. These questions touch on a long-felt need in scientific research. Statistics exist, to be sure, showing the approximate percentage of numerous hereditary disorders that relate back to marriage between blood relatives; but there is little reliable information as to what percentage of children with hereditary defects are the offspring of marriages between blood relatives. Moreover, in connection with medical advice to persons contemplating marriage, every case in which consanguinity between the contracting parties is involved must be judged on its own merits, the decision depending on the degree of consanguinity, and the degree and nature of the possible hereditary defects.

From reports of the Reichsdeutscher Blindenverband the following statements pertaining to the hereditary nature of blindness have been derived: The marriage of blood relatives constitutes an increased danger of hereditary transmission of blindness. In Switzerland, it was found that 4.3 per cent of the blind persons were offspring of marriages between blood relatives. A similar percentage (4.71) was found in Germany among the congenitally blind. It has been computed that, in general, among the offspring of marriages between blood relatives, there are 7½ times as many blind persons as from other marriages. The fact that among the Jews the incidence of blindness is greater than among the remainder of the population of Germany (the ratio is as 63 to 53) is doubtless due to the increased danger of hereditary transmission resulting from marriage between blood relatives. In general, however, blind persons contribute through their offspring only to a slight extent to the total number of blind persons—scarcely more, in proportion, than does the remainder of the population. It appears likely, nevertheless, that when the contracting parties are blood relatives and are both blind, there is an increased danger of hereditary transmission (THE JOURNAL, Sept. 27, 1930, p. 949).

### Research on Vitamins and Hormones

There has been, of late, an almost uncanny development in the research on the nature of vitamins. Only recently, vitamins A, $B_1$, C and D have been made known in quick succession (THE JOURNAL, Aug. 19, 1933, p. 616), and now $B_2$ is in the limelight. It has already been isolated in pure form, and its general formula has been established (a report on which was made by Prof. R. Kuhn of the Kaiser Wilhelm-Institut in Heidelberg in the *Berichte der Deutschen Chemischen Gesellschaft*). The rest will soon follow. The discovery of the nature of this antipellagra vitamin was brought about by many strange detours. The first step was accomplished when various investigators called attention to the reddish-yellow pigments in the cells, which were characterized by strong fluorescence and great sensitiveness to light. They differ from the other yellow cellular pigments, the fat-soluble carotenoids, by reason of their solubility in water, and are equally far removed from the hemins of the cell. It belongs, therefore, to an entirely new group termed "lyochromes." As it was found, on the other hand, that preparations of $B_2$ likewise contain similar pigments, the ring could now be closed.

R. Kuhn isolated from eggs and milk apparently identical pigments (ovoflavine and lactoflavine, respectively), which have the properties sought. To the pure substances Kuhn has assigned the formula $C_{17}H_{20}N_4O_6$; they appear to lie close to the uric acid group or to the closely related pigments found in the wings of insects. In the cell itself they are fixed to a higher complex by protein or carbohydrate. Lactoflavine, as a result of animal experimentation, proved to be the most potent preparation of $B_2$ as yet discovered. It was effective in daily doses of $\frac{1}{6,000}$ mg., but only when a further (colorless) factor derived from yeast and previously unknown was present. To this group of lyochromes belongs also the "second respiratory ferment" obtained from cells by Warburg (THE JOURNAL, Aug. 19, 1933, p. 616). With these results the circle is closed also at this point: also vitamin $B_2$ acts, as does vitamin C, in such a manner that it becomes alternately reduced and oxidized in the cell and thus exerts a decisive influence on the general metabolism of the respiratory cell.

But some even more startling connections were discovered. It has been known for some time that substances having an action similar to sex hormones of animal origin are present also in plants (THE JOURNAL, May 6, 1933, p. 1445). A close relationship between these two groups of animal and vegetable hormones was at once assumed, but proof of their identity was not furnished. After Butenandt had discovered and explained the structure of the sex hormones, he was in a position to attack the foregoing problem. In collaboration with Jacobi, he produced from palm seeds the female principle ("thelykinin") in pure form and compared it with the follicular hormone derived from the urine of a pregnant woman. In a statement in the *Zeitschrift für physikalische Chemie*, he avers that the two substances were identical. His research furnishes proof of the existence of true sex hormones in the plants, and this discovery gives rise at once to questions of the greatest biologic significance, aside from the importance of the rôle of the hormones with respect to the plants themselves. The question arises as to whether the animal hormone is simply taken in with the food and stored. If that should prove to be the case, why does it exert no effect before the onset of sexual maturity? But the most important consideration is: If it is true that the animal hormone is derived from the plant food, then, according to previous terminology, it is not a hormone at all but a vitamin, and a distinction between the two substances is artificial and would have to be abandoned. But these questions cannot be answered as yet. On the basis of recent results, one is, however, justified in at least raising and seriously discussing such questions.

### Fees and Opinions on Value of Drugs

The newly established Nationalverband der deutschen Heilmittelindustrie has made the following announcement: No further fees shall be paid to physicians for articles or expert opinions on medical preparations. However, no objection will be made if a physician is remunerated in advance to compensate him for expense and loss of time in preparing expert opinions on medicinal preparations. In such an event, however, a written agreement must be signed, and it must be expressly stated that the fee was paid before the beginning of the investigation, and it must be left to the physician whether he will publish the results of his inquiry, irrespective of the fact as to whether his opinion is favorable or unfavorable to the preparation.

### Gustav Embden's Death

Prof. Gustav Embden died suddenly in Frankfort-on-Main, at the age of 59. He was a pupil of Hofmeister in Strasbourg, and came, in 1906, to Frankfort-on-Main, where he took over, in the von Noorden clinic, the chemical, clinical and physiologic researches, and, before the founding of the University of Frankfort-on-Main, brought the laboratory researches of the Municipal Hospital to a position of importance. In 1914 he became ordinarius in chemical physiology at the new university and, at the same time, director of the Municipal Chemicophysiologic Institute and of the University Institute for Vegetative Physiology. The scope of his research work was extensive, and his scientific investigations on the chemical processes of the muscle, on the metabolism of phosphorus, and on the metabolism of the liver, brought him international recognition.

## ITALY

*(From Our Regular Correspondent)*

June 30, 1933.

### Experiments on a Pregnancy Test

Professor Spirito, of the University of Siena, reported to the Accademia dei fisiocritici his research on a pregnancy test using the urine of a gravid woman and intra-ocular ovarian transplants. He based his research on the experiments of Schochet and MacKee and of Neuman, who showed that fragments of the uterus transplanted into the anterior chamber of the eye of the rabbit reveal changes with relation to the estrual cycle. In Spirito's experiments the intra-ocular transplants of rabbits remained alive for several months. His studies are still inconclusive. The advantage of the method would be that it would be possible to perform a test under direct vision many times on the same animal, owing to the peculiar mechanism of ovulation in the rabbit.

### Congress of Legal Medicine

The fifth Congresso nazionale di medicina legale was held recently in Rome, under the chairmanship of Professor Ottolenghi, director of the Istituto de medicina legale of the Royal University. Professor Lattes presented a paper on "The Blood Groups," especially the subgroups.

Professor Nicoletti of Palermo dealt with relations between blood groups and morphologic characters: head, ear, eye, color and appearance of the hair, and color of the skin. Palmieri of Naples reported the results of his research on the relation between group-specific properties and osmotic pressure of the blood.

The second main topic listed concerned the problems of medicine with relation to insurance. Professor Giannini explained the evolution of the conception of risk in social insurance, and the position of medicine with relation to various forms of insurance. The risk is no longer to be regarded as a mere legal relation but rather as a potential damage to productivity that threatens, in the individual, society.

Professor Cazzaniga of Milan offered a communication on some medical problems pertaining to insurance, in which infections are involved. He discussed expert medical opinions on the diagnosis of infections, the occupational nature of risks, and the evaluation of disability.

Professor Palmieri of Naples considered the much debated question of the age limits for the granting of old age pensions and endorsed the continuance of the present limit of 65 years for men and the lower limit of 60 years for women.

The third topic concerned criminal anthropology and the scientific organization of police work. Dr. Di Tullio spoke on the applications of a knowledge of the personality of a delinquent in the new penal legislation of Italy, calling attention to the modern legislative tendency toward judicial and administrative individualization with respect to penalties.

It is necessary that judges shall have an adequate knowledge of modern anthropology and criminal psychology, sciences that embrace all the necessary ideas for the complete biologic study of the delinquent and for the application of new criteria of penal justice.

### The Medicosurgical Society of Catania

Professor Alaimo spoke before the Società medico-chirurgica of Catania on dacryocystitis in the new-born. The diagnosis must be made early, in order to provide effective therapy, which comprises massage of the lacrimal region every other day, accompanied by medication of the conjunctival sac with ethylhydrocupreine (optochin) ointment and mild silver-protein, without resorting to exploration of the lacrimal tracts. This method effects constantly a cure.

Professor Greco reported three cases of vesical diverticula, which did not interfere with urination and had none of the characteristics of congenital diverticula. All three patients presented a sacrolumbar rachischisis. The speaker holds that vertebral malformation may provoke spasms of the excretory passages, acting thus as a mechanical obstacle and increasing the efforts of the bladder to perform its function.

Dr. Giuffrida, on the basis of research on laryngeal tuberculosis, affirmed that there is a latent tuberculosis of the larynx in 90 per cent of the cases in the microscopically sound larynges of persons affected with pulmonary tuberculosis. The latent lesions are frequently located in the lymphoid tissues of the larynx.

### Detail Drug Salesmen Prohibited

A decree has been proclaimed forbidding unfair practices in promoting the sale of medicinal products. Violations of the order may bring suspension of the right to practice medicine or temporary closure of a pharmacy. Pharmaceutic houses are forbidden to send, as in the past, their representatives to physicians with a view to advertising their preparations.

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## Marriages

MARTIN VAN BUREN TEEM to Miss Louise Greene, both of Marietta, Ga., at Elizabethtown, Ky., July 8.

OSCAR BERYL MURRAY, Lafayette, Ga., to Miss Alice Smith of Lakeview, S. C., at Aiken, S. C., in June.

LUCIOUS LAMAR DAVIDGE, Amite, La., to Miss Ruth Marsalis Smith of Jackson, July 12.

GERALD HAYNES TEASLEY, Atlanta, Ga., to Miss Anne Redus Smith of Elkmont, July 8.

PAUL H. THOROUGH, Omaha, to Miss Margaret Cunningham of Schuyler, Neb., June 17.

OMAR J. EAST, Reed City, Mich., to Mrs. Violet Green at Elkhart, Ind., July 18.

LANDON G. GANT, Rushville, Neb., to Miss Virginia Hassler of Omaha, June 15.

HARRY B. FERMAGLICH to Miss Iris Loomer, both of Brooklyn, June 25.

# Deaths

**William Ray Bathurst** ✠ Little Rock, Ark.; University of the South Medical Department, Sewanee, Tenn., 1898; member of the House of Delegates of the American Medical Association, 1920-1928, 1930, 1932 and 1933; secretary of the Arkansas Medical Society; past president of the Southern Medical Association; professor of dermatology, University of Arkansas School of Medicine; fellow of the American College of Physicians; member of the American Radium Society; on the staffs of the Missouri Pacific, Baptist State, Arkansas Children's hospitals and St. Vincent's Infirmary; aged 57; died, August 30.

**Samuel Smith Cottrell,** Boston; Boston University School of Medicine, 1914; member of the Massachusetts Medical Society, American Psychiatric Association and the New England Society of Psychiatry; formerly instructor in psychiatry, Tufts College Medical School; served during the World War; chief executive officer of the Boston Psychopathic Hospital; aged 44; died, July 16, of bronchopneumonia.

**Robert Lee Woodard,** Hopkinsville, Ky.; Vanderbilt University School of Medicine, Nashville, Tenn., 1896; member and past president of the Kentucky State Medical Association; past president of the Christian County Medical Society; county health officer; on the staff of the Jennie Stuart Memorial Hospital; served during the World War; aged 59; died, July 29, of cerebral hemorrhage.

**Harry Raymond Carson,** North Chicago, Ill.; University of Nebraska College of Medicine, Omaha, 1910; member of the American Psychiatric Association; served during the World War; medical officer in charge of the Veterans' Administration Hospital; aged 59; died, July 31, in the Veterans' Administration Hospital, Oteen, N. C., of tuberculosis.

**Martin Warner Hanson** ✠ Havana, Ill.; Jenner Medical College, Chicago, 1908; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1909; served during the World War; aged 54; died, July 30, in St. Francis Hospital, Peoria, of septicemia and cellulitis of the face.

**Willard Tipple Rivenburgh,** Poughkeepsie, N. Y.; Albany (N. Y.) Medical College, 1910; member of the Medical Society of the State of New York; served during the World War; aged 47; on the staff of the Vassar Hospital, where he died, August 11, following an operation for gallstones and appendicitis.

**James Lee Funkhouser,** Danville, Ill.; Medical College of Indiana, Indianapolis, 1905; member of the Illinois State Medical Society; served during the World War; on the staffs of the Veterans' Administration Home and the Lakeview Hospital; aged 50; died, August 11, of an accidental gunshot wound.

**Oscar Jay Bowman,** Horseheads, N. Y.; University of Pennsylvania School of Medicine, Philadelphia, 1893; member of the Medical Society of the State of New York; for many years member of the board of health of Horseheads and the school board; aged 72; died, July 26.

**Edward John Denning** ✠ Boston; Harvard University Medical School, Boston, 1905; associate professor of theory and practice of medicine, Tufts College Medical School; on the staff of the Carney Hospital; aged 53; died, June 28, at his summer home in Cohasset, Mass.

**Edward Clark Davidson** ✠ Detroit; Johns Hopkins University School of Medicine, Baltimore, 1920; fellow of the American College of Surgeons; on the staffs of the Children's Hospital of Michigan and the Harper Hospital; aged 39; died, August 7, of heart disease.

**John Joseph Michael Farrington,** Mechanicsville, Md.; Georgetown University School of Medicine, Washington, D. C., 1931; member of the Medical and Chirurgical Faculty of Maryland; aged 28; died, August 14, of accidental drowning while fishing near Leonardtown.

**John Hathaway Lindsey** ✠ Fall River, Mass.; University of Pennsylvania School of Medicine, Philadelphia, 1899; member of the American Roentgen Ray Society and the New England Roentgen Ray Society; served during the World War; aged 62; died, July 29.

**John Dale Graham,** Columbus, Kan.; University of Kansas City (Mo.) Medical Department, 1904; member of the Kansas Medical Society; on the staff of the Maud Norton Memorial City Hospital; aged 59; died, June 25, of septicemia, following influenza.

**David William Edelman,** Los Angeles; University of the City of New York Medical Department, 1891; member of the California Medical Association; aged 64; on the staff of the Cedars of Lebanon Hospital, where he died, August 6, of heart disease.

**Telesphore E. Caron,** Kankakee, Ill.; Laval University Medical Faculty, Montreal, Que., Canada, 1891; member of the Illinois State Medical Society; on the staff of St. Mary's Hospital; aged 68; died, August 17, of carcinoma with metastases.

**Harvey H. Carter,** Dayton, Ohio; Medical College of Ohio, Cincinnati, 1889; member of the Ohio State Medical Association; aged 67; died, August 17, in the Good Samaritan Hospital following an operation for strangulated hernia.

**Leslie Burritt Joslyn** ✠ Maywood, Ill.; Northwestern University Medical School, Chicago, 1910; aged 47; on the staff of the Westlake Hospital, Melrose Park, where he died, August 18, of injuries received in an airplane accident.

**Adelbert Edwards,** Reedsburg, Wis.; State University of Iowa College of Medicine, Iowa City, 1885; Rush Medical College, Chicago, 1889; member of the State Medical Society of Wisconsin; aged 72; died, August 11.

**Hilliard Elias Griffin,** Coffeeville, Miss.; Memphis (Tenn.) Hospital Medical College, 1905; served during the World War; aged 55; died, August 12, in the Grenada (Miss.) Hospital, of chronic interstitial nephritis and uremia.

**Oscar Jarrell Hagebush** ✠ Ashley, Ill.; Washington University School of Medicine, St. Louis, 1901; formerly managing officer of the Anna (Ill.) State Hospital; aged 55; died, August 6, of a skull fracture received in a fall.

**Donald Bunker Sinclair** ✠ Princeton, N. J.; Columbia University College of Physicians and Surgeons, New York, 1914; served during the World War; on the staff of the Princeton Hospital; aged 44; died, August 9.

**John Hamilton Hanes,** Columbus, Ohio; Ohio Medical University, Columbus, 1897; member of the Ohio State Medical Association; formerly county coroner; aged 71; died suddenly, August 15, of organic heart disease.

**Charles Howard Bangs,** Swampscott, Mass.; Medical School of Maine, Portland, 1892; member of the Massachusetts Medical Society and the New England Dermatological Society; aged 72; died, August 6.

**Asbury Harpending Baker** ✠ Elmira, N. Y.; University of Buffalo School of Medicine, 1885; aged 72; on the staff of the Arnot Ogden Memorial Hospital, where he died, June 11, of cerebral hemorrhage.

**Helen Mary Buchanan,** Chicago; Chicago Homeopathic Medical College, 1882; aged 84; died, July 31, in the Chicago Memorial Hospital, of subphrenic abscess, cholelithiasis, cholecystitis and cholangeitis.

**Wilbur L. Wright,** Fulton, N. Y.; Georgetown University School of Medicine, Washington, D. C., 1894; aged 74; was found dead in bed, July 9, of coronary thrombosis, arteriosclerosis and nephritis.

**Harry Bell Bertolette,** Shreve, Ohio; University of Pennsylvania School of Medicine, Philadelphia, 1892; served during the World War; aged 66; died suddenly, August 10, of coronary thrombosis.

**Benedict P. Wentker** ✠ St. Charles, Mo.; Beaumont Hospital Medical College, St. Louis, 1900; aged 59; on the staff of St. Joseph's Hospital, where he died, August 4, of pulmonary embolism.

**Eugene Duncan Clarke Bayne,** East Cleveland, Ohio; Cleveland College of Physicians and Surgeons, Medical Department of Ohio Wesleyan University, 1899; aged 61; died, August 4.

**Henry F. Jones,** Flat Rock, Ill.; University of Kentucky School of Medicine, Louisville, 1885; member of the Illinois State Medical Society; aged 79; died, August 6, of cirrhosis of the liver.

**Jacob Cohen** ✠ Brooklyn; University and Bellevue Hospital Medical College, New York, 1921; on the staff of the Beth Moses Hospital; aged 36; died, August 14, in the Jewish Hospital.

**Edward Jacob Stone,** Chicago; Rush Medical College, Chicago, 1921; clinical assistant in obstetrics and gynecology at his alma mater; aged 38; died, August 7, of angina pectoris.

**Hartwell James Frederick** ✠ Augusta, Maine; Medical School of Maine, Portland, 1884; on the staff of the Augusta General Hospital; aged 74; died, July 16, of aortic stenosis.

**Joseph Alfred Choquette,** Lewiston, Maine; School of Medicine and Surgery of Montreal, Que., Canada, 1904; aged 58; died, July 26, in Montreal, of intestinal obstruction.

**Charles Sumner Gregory,** Findlay, Ill.; Keokuk (Iowa) Medical College, 1896; member of the Illinois State Medical Society; aged 58; died, August 12, of heart disease.

**Elizabeth H. Gerow,** Grand Rapids, Mich.; University of Michigan Medical School, Ann Arbor, 1875; aged 88; died, August 16, of carcinoma of the lungs.

**William John Wulstein,** Ashton, Ill.; Hahnemann Medical College and Hospital, Chicago, 1903; aged 63; died, August 12, in the Methodist Hospital, Peoria.

**Walter Clarence Coney,** Jonesville, La.; Louisville (Ky.) Medical College, 1897; health officer of Catahoula parish; aged 65; died, July 8, of heart disease.

**Zack Hinkson Hauser,** Columbus, Ind.; Medical College of Indiana, Indianapolis, 1866; aged 94; died, August 4, in the Bartholomew County Hospital.

**Robert Emmett Robinson,** Morrison, Ill.; University of Michigan Medical School, Ann Arbor, 1870; aged 85; died, August 12, of heart disease.

**Henry Jacob Cordier,** Denver; University of Michigan Medical School, Ann Arbor, 1879; aged 82; died, July 18, of carcinoma of the prostate.

**Thomas Spencer Layton,** Hinesville, Ga.; Southern Medical College, Atlanta, 1891; formerly mayor and bank president; aged 75; died, June 30.

**Thomas Charles Cannon,** Jonesboro, Ga.; University of Georgia Medical Department, Augusta, 1883; aged 75; died, July 16, at Americus.

**James Douglas Nisbet,** Van Wyck, S. C.; Louisville (Ky.) Medical College, 1886; aged 72; died, July 27, in a hospital at Charlotte, N. C.

**Paul Penney French,** Boise, Idaho; Rush Medical College, Chicago, 1897; aged 59; died, July 1, in St. Luke's Hospital, of bronchopneumonia.

**Robert Wallace Craig,** Phoenix, Ariz.; Rush Medical College, Chicago, 1895; aged 61; died, July 10, of erysipelas and acute nephritis.

**John F. Blankenship,** Havana, Ill.; College of Physicians and Surgeons, Keokuk, Iowa, 1890; aged 75; died, July 19, at Forest City.

**Joseph Baulne,** St. Andre Avellin, Que., Canada; Victoria University Medical Department, Coburg, Ont., 1888; aged 73; died, April 29.

**William Henry Feurt,** Proctorville, Ohio; Miami Medical College, Cincinnati, 1876; aged 81; died, July 19, at Wheelersburg.

**Bernhard Stern** ✠ Brooklyn; Long Island College Hospital, Brooklyn, 1896; aged 62; died, July 26, in Montreal, Que., Canada.

**Willard Clayton Emery,** Kenton, Ohio; Pulte Medical College, Homeopathic, Cincinnati, 1879; aged 77; died, July 30, of embolism.

**John H. Giles,** Ripley, Miss.; University of Louisville (Ky.) School of Medicine, 1882; aged 76; died, July 16, of cerebral hemorrhage.

**Samuel T. Hubbs,** Elizabethtown, Ky.; Hospital College of Medicine, Louisville, 1875; aged 90; died, August 1, of cerebral hemorrhage.

**François Adelme Joncas,** St. Vallier, Que., Canada; Laval University Faculty of Medicine, Quebec, 1904; aged 55; died, April 18.

**Moses Collins,** Lexington, Ky.; Louisville Medical College, 1887; aged 68; died, August 12, of subacute bacterial endocarditis.

**C. C. Bentley,** Quito, Tenn.; University of Louisville (Ky.) School of Medicine, 1892; aged 82; died, July 23, of heart disease.

**George Etienne Bédard,** Montreal, Que., Canada; School of Medicine and Surgery of Montreal, 1903; aged 57; died, June 2.

**James Henry Cully,** Pembroke, Ont., Canada; McGill University Faculty of Medicine, 1921; aged 37; died, July 20.

**Jacob D. Fleming,** Frazeysburg, Ohio; Columbus Medical College, 1887; aged 76; died, July 21, of organic heart disease.

**James F. Madden,** Toledo, Ohio; Keokuk (Iowa) Medical College, 1892; aged 64; died, July 25, of coronary thrombosis.

**Moritz Wulfson Dreyer,** Brooklyn; University of Juriev, Russia, 1889; aged 70; died, August 20, of heart disease.

**John Taylor Gilman Emery,** Saco, Maine (licensed, Maine, by years of practice); died, April 30.

# *Bureau of Investigation*

## MISBRANDED "PATENT MEDICINES"

### Abstracts of Notices of Judgment Issued by the Food and Drug Administration of the United States Department of Agriculture

[EDITORIAL NOTE: The abstracts that follow are given in the briefest possible form: (1) the name of the product; (2) the name of the manufacturer, shipper or consigner; (3) the composition; (4) the type of nostrum; (5) the reason for the charge of misbranding and (6) the date of issuance of the Notice of Judgment—which may be considerably later than the date of the seizure of the product.]

**Von's Pink Tablets.**—Omaha Von Co., Omaha, Neb. Composition: Essentially bismuth subnitrate, magnesium oxide and sodium bicarbonate. For acidosis, stomach ulcers, etc. Fraudulent therapeutic claims.—[*N. J. 19468, December, 1932.*]

**Blackhawk's Compound Liniment.**—Blackhawk Remedy Co., Baltimore, Md. Composition: Essentially a crude mineral oil, gasoline, red pepper, methyl salicylate, and oils of mustard, eucalyptus and turpentine. Fraudulent therapeutic claims.—[*N. J. 19159; Oct. 10, 1932.*]

**Renolin.**—Renolin Co., Bradford, N. H. Composition: About 8 grains of cinchophen in each tablet. Falsely declared harmless. For rheumatism, neuritis, lumbago, etc. Fraudulent therapeutic claims.—[*N. J. 19160; Oct. 10, 1932.*]

**Urodonal.**—George J. Wallau, Inc., New York. Composition: Essentially methenamine (4 per cent), sodium phosphate (18 per cent), baking soda, tartaric acid, citric acid, and a small amount of sugar. For rheumatism, eczema, asthma, etc. Fraudulent therapeutic claims.—[*N. J. 19477; December, 1932.*]

**Hammer's Kidney and Bladder Pills.**—Hygenol Co., Minneapolis. Composition: Saltpeter, extracts of plant drugs including licorice and a laxative drug, and juniper oil. Fraudulent therapeutic claims.—[*N. J. 19479; December, 1932.*]

**Rico Rheumatism Remedy and Rico Tablets.**—Rico Medicine Co., Chicago. Composition: Rheumatism Remedy contained potassium iodide and a small amount of plant material such as celery, with alcohol and water; Tablets contained ammonium salicylate, potassium iodide, an iron compound and extracts of plant drugs, including a laxative. Fraudulent therapeutic claims.—[*N. J. 19481; December, 1932.*]

**Beam Rheumatism Exterminator.**—Beam Medicine Co., Waterloo, Iowa. Composition: Small amounts of sulphuric acid, common salt, extracts of plant drugs including a laxative, and 98.3 per cent of water. Fraudulent therapeutic claims.—[*N. J. 19482; December, 1932.*]

**Carey's Lifetone Prescription.**—Gallagher Drug Co., Dayton, Ohio. Composition: Pills containing ferrous carbonate, strychnine, zinc phosphide and juniper oil. For general debility, brain fatigue, etc. Fraudulent therapeutic claims.—[*N. J. 19483; December, 1932.*]

**Carey's Marshroot Laxative Pills.**—Gallagher Drug Co., Dayton, Ohio. Composition: Aloe and podophyllum extract. Fraudulent therapeutic claims.—[*N. J. 19483; December, 1932.*]

**Lillibeck's Antiseptic Aseptine.**—Vicksburg Chemical Co., Vicksburg, Miss. Composition: Essentially small amounts of volatile oils, including menthol and peppermint, with alcohol and water, and traces of tannin and ethyl nitrite. For rheumatism, neuralgia, wounds, etc. Fraudulent therapeutic claims.—[*N. J. 19485; December, 1932.*]

**Weldona.**—Kells Co., Newburgh, N. Y. Composition: In each tablet, aspirin (0.8 grain), calcium carbonate (1.7 grain), with extract of plant drugs including licorice, and calcium carbonate, magnesium carbonate, sugar and starch. For rheumatism, etc. Fraudulent therapeutic claims.—[*N. J. 19487; December, 1932.*]

**Munyon's Paw-Paw Tonic.**—McKesson Lincoln Co., Little Rock, Ark. Composition: Extracts of plant drugs including nux vomica, a minute quantity of an iron compound, 17 per cent alcohol. For dyspepsia, nervousness, general debility, etc. Fraudulent therapeutic claims.—[*N. J. 19488; December, 1932.*]

**Re-Ju-Va.**—DeVore Manufacturing Co., Columbus, Ohio. Composition: Essentially epsom salt, small amounts of potassium, sodium and iron compounds, glycerine and water. For rheumatism, high blood pressure, blood disorders, etc. Fraudulent therapeutic claims.—[*N. J. 19489; December, 1932.*]

**Servex.**—Servex Laboratories, Ltd., Hollywood, Calif. Composition: Essentially oxyquinoline sulphate, quinine sulphate and boric acid. For leucorrhea, vaginal infections, etc. Fraudulent therapeutic claims.—[*N. J. 19496; December, 1932*]

**Meyer's Mount Clemens Aperient Water.**—John Meyer, Mount Clemens, Mich. Composition: Common salt, epsom and Glauber's salts. For stomach, liver and kidney disorders, etc. Fraudulent therapeutic claims.—[*N. J. 19497; December, 1932.*]

**Ki-La-Ga.**—Hartig Drug Co., Dubuque, Iowa. Composition: Essentially iron, copper, albumin, zinc, calcium and magnesium compounds, sulphates and water. For eczema, erysipelas, catarrh, soft corns, etc. Fraudulent therapeutic claims.—[*N. J. 19498; December, 1932.*]

**Phillips' Anti-Phlogistic Mud.**—Denver Mud Chemical Co., Kansas City, Mo. Composition: Clay, glycerine, boric acid and essential oils, including methyl salicylate. For pneumonia, boils, rheumatism, corns, etc. Fraudulent therapeutic claims.—[*N. J. 19499; December, 1932.*]

**Gento.**—Gento Laboratories, Philadelphia, Pa. Composition: Essentially sodium, potassium and calcium compounds, methenamine, extracts of plant drugs including a laxative; alcohol and water. For general debility, liver and kidney disorders, etc. Fraudulent therapeutic claims.—[*N. J. 19500; December, 1932.*]

**Davis' Rheumagon.**—Rheumagon Sales Co., Wheeling, W. Va. Composition: Capsules each containing 8 grains of aspirin, 1.21 grains of acetphenetidin and 0.21 grain of caffeine. For rheumatism, neuritis, etc. Fraudulent therapeutic claims.—[*N. J. 19051; December, 1932.*]

**Alexander's Lung Healer.**—Valley Drug Co., Wilkes-Barre, Pa. Composition: Essentially extracts of plant drugs including ipecac, with chloroform, glycerin, sugar and water. Fraudulent therapeutic claims.—[*N. J. 19503; December, 1932.*]

**Stillman's Douche Powder.**—Stillman Co., Aurora, Ill. Composition: Essentially boric acid, zinc sulphate and a small amount of zinc phenolsulphonate. For vaginal disorders, etc. Fraudulent therapeutic claims.—[*N. J. 19506; December, 1932.*]

**Nitro-Methol Aseptic.**—Denver Mud Chemical Co., Kansas City, Mo. Composition: Essentially ethyl nitrite, alcohol (58 per cent by volume), and small amounts of aldehydes and volatile oils, including menthol and thymol. For eczema, erysipelas, female trouble, etc. Fraudulent therapeutic claims.—[*N. J. 19512; December, 1932.*]

**Fosfatol Tonic.**—Vitagenol Medicine Co., El Paso, Texas. Composition: Essentially compounds of sodium and calcium, strychnine, phosphates, alcohol (10 per cent by volume), glycerine and water. For anemia, pneumonia, syphilis, etc. Fraudulent therapeutic claims.—[*N. J. 19518; December, 1932.*]

**Goodwin's Silkweed Herbal Compound.**—Dr. F. A. Goodwin, Chicago. Composition: Essentially extracts of plant drugs including a laxative drug such as senna, a resinous drug such as scammony, and an aromatic drug such as fennel; inorganic material such as calcium carbonate and sodium carbonate or bicarbonate. For rheumatism, malaria, liver and kidney disorders, etc. Fraudulent therapeutic claims.—[*N. J. 19520; December, 1932.*]

**Malva.**—Malva Medicine Co., Columbus, Ohio. Composition: Essentially extracts of plant drugs including laxatives, such as cascara sagrada, and a mydriatic drug such as belladonna, with alcohol, sugar and water. For general debility, etc. Fraudulent therapeutic claims.—[*N. J. 19522; December, 1932.*]

**Citro-Nesia.**—Citro-Nesia Co., Inc., Chicago. Composition: A solution of citrate of magnesia. Misbranded because the claim, "an improved citrate of magnesia," was false and misleading.—[*N. J. 19190; Oct. 10, 1932.*]

**Germania Herb Tea.**—Royal Drug Co., Chicago. Composition: Essentially senna leaves with smaller amounts of other plant drugs including corn-flower, arnica, uva ursi and mydriatic alkaloids. Fraudulent therapeutic claims.—[*N. J. 19655; February, 1933.*]

**Ward's Pills.**—Dr. Ward's Medical Co., Winona, Minn. Composition: Essentially extracts of plant drugs, such as uva ursi and buchu, with juniper oil, methylene blue and potassium nitrate. For urinary disorders, diabetes, etc. Fraudulent therapeutic claims.—[*N. J. 19658; February, 1933.*]

**Suckow's Rheumatic Remedy.**—John K. Suckow, M.D., Los Angeles. Composition: Essentially sodium salicylate, potassium iodide, colchicin, sugar and water. Fraudulent therapeutic claims.—[*N. J. 19660; February, 1933.*]

**Lekotoria.**—Karnack-Ambrosia Co., Scranton, Pa. Composition: Essentially extracts of plant drugs including aloe, with sugar, alcohol and water. For stomach, liver and kidney disorders, etc. Fraudulent therapeutic claims.—[*N. J. 19664; February, 1933.*]

**Z-G-Herbs.**—Z-G-Herbs Co., Chicago. The shipment consisted of five different products, which, when examined, were found to contain various herbs and roots. For influenza, epilepsy, impure blood, gonorrhea, etc. Fraudulent therapeutic claims.—[*N. J. 19667; February, 1933.*]

**Lar-lo-Ben.**—Marvell Pharmacal Co., Inc., New York. Composition: Essentially small amounts of common salt, iodides, benzyl alcohol and gallic acid, with glycerine and water, flavored with vanillin. For nose, throat and mouth disorders. Adulterated because below standard; misbranded because of fraudulent therapeutic claims.—[*N. J. 19668; February, 1933.*]

**Hoyt's Vapor-Ply.**—Hoyt Bros., Inc., Newark, N. J. Composition: Essentially petrolatum, with oils of camphor, menthol, eucalyptol, thymol and methyl salicylate. For influenza, muscular rheumatism, chilblains, etc. Fraudulent therapeutic claims.—[*N. J. 19670; February, 1933.*]

**Runners Extract of Cod-Liver Oil Cordial.**—C. H. Griest Co., Inc., Wheeling, W. Va. Composition: Essentially compounds of phosphorus, calcium, sodium, potassium, iron and manganese, with traces of quinine and strychnine alkaloids, wild cherry, sugar, alcohol and water, flavored. Adulterated and misbranded; fraudulent therapeutic claims.—[*N. J. 19673; February, 1933.*]

**Earle's Hypo-Cod.**—Earle I. Runner, Wheeling, W. Va. Composition: Essentially iron, manganese, calcium, quinine, strychnine and phosphorus compounds, with extracts of plant drugs including a laxative, and a solid fatty acid. Adulterated and misbranded; fraudulent therapeutic claims.—[*N. J. 19674; February, 1933.*]

**Tripp's Tonic Prescription.**—Norwood Pharmaceutical Co., Chicago. Composition: Essentially potassium iodide, extracts of plant drugs including colchicum, cinchona and a laxative, red saunders, alcohol and water. For rheumatism, impure blood, etc. Fraudulent therapeutic claims.—[*N. J. 19675; February, 1933.*]

**Denver Mud.**—Denver Mud Co., Inc., Denver. Composition: Essentially clay, glycerine and boric acid, perfumed with methyl salicylate. For congestion, inflammation, etc. Fraudulent therapeutic claims.—[*N. J. 19197; Oct. 10, 1932.*]

**Salie's Canker Remedy.**—E. R. Littlefield, Rochester, N. H. Composition: Extracts of plant drugs, including tannin, with glycerine and water. For diphtheria, diarrhea, etc. Fraudulent therapeutic claims.—[*N. J. 19854; May, 1933.*]

**M-A-C Stomach Tonic.**—Smith Bros., Berkeley and Oakland, Calif. Composition: Essentially bismuth subnitrate, calcium carbonate and magnesium carbonate, in a mixture of glycerine and water, with peppermint flavor. Fraudulent therapeutic claims.—[*N. J. 19856; May, 1933.*]

**Hudson's Iron and Nux Liver and Blood Tonic.**—Hudson Medicine Co., Hopewell, Va. Composition: Essentially epsom salt with iron, a chloride and a small amount of strychnine. Fraudulent therapeutic claims.—[*N. J. 19857; May, 1933.*]

**Bock Toa Rheumatic Remedy.**—Bock Toa Hong & Co., San Francisco. Composition: Essentially small amounts of extracts of plant drugs, with sugar, alcohol and water. Fraudulent therapeutic claims.—[*N. J. 19858; May, 1933.*]

**Ru-Ma-Co Herbal Tonic.**—F. D. Werst, Portland, Ore. Composition: Essentially extracts of plant drugs, including licorice and a laxative drug, with glycerine and water. Fraudulent therapeutic claims.—[*N. J. 19859; May, 1933.*]

**Nash's Rheumatism Remedy and Kidney Invigorator.**—S. Nash & Co., Scarsdale, N. Y. Composition: Essentially volatile oils (92 per cent), such as turpentine and cajuput, resins and a trace of an alkaloid. Fraudulent therapeutic claims.—[*N. J. 19866; May, 1933.*]

**Jo-Vex.**—Jo-Vex Chemical Products Co., St. Louis. Composition: Essentially chloride of lime, with chlorine and water. For carbuncles, eczema, hives, etc. Fraudulent therapeutic claims.—[*N. J. 19869; May, 1933.*]

**Penetrating Liniment.**—White Purity Products, Washington, D. C. Composition: Alcohol (46.7 per cent by volume), chloroform (5.61 minims per fluid ounce), methyl salicylate, boric acid, distilled witch hazel extract and water. Misbranded as to alcohol content; fraudulent therapeutic claims.—[*N. J. 19871; May, 1933.*]

**Robene.**—E. I. Runner Co., Inc., Wheeling, W. Va. Composition: Essentially volatile oils including peppermint, camphor, methyl salicylate and thuja, with chloroform (71 minims per fluidounce) and alcohol (61 per cent by volume), colored with a green dye. For rheumatism, bunions, swollen feet, etc. Misbranded as to alcohol content; fraudulent therapeutic claims.—[*N. J. 19878; May, 1933.*]

**Raysol Water.**—Raysol Inc., Cincinnati, Ohio. Adulterated because below professed standard as an alleged radium water and misbranded because of false and misleading claims as to radium content.—[*N. J. 19880; May, 1933.*]

**Cacodyne Tablets.**—Girard Pharmacal Co., Philadelphia. Adulterated and misbranded because of false and misleading claim that each tablet contained 2 grains of acetanilid, which it did not.—[*N. J. 19886; May, 1933.*]

**Kreitzer's Salve.**—Aschenbach & Miller, Inc., Philadelphia. Composition: Essentially a lead soap, camphor, rosin, in a fatty base. For boils, carbuncles, tumors, erysipelas, etc. Fraudulent therapeutic claims.—[*N. J. 19887; May, 1933.*]

**Sinaspra.**—Sinaspra Corporation, Columbus, Ohio. Composition: A small amount of ephedrine, with glycerine and water. For sinus troubles, etc. Fraudulent therapeutic claims.—[*N. J. 19888; May, 1933.*]

**Ma Burns' Liniment.**—Ma Burns' Liniment Co., Boston. Composition: An emulsion containing turpentine oil, uncombined ammonia (8.8 per cent) and water. Fraudulent therapeutic claims.—[*N. J. 19889; May, 1933.*]

**Pinkard's Sanguinaria Compound.**—John Henry Pinkard, Roanoke, Va. Composition: Essentially extracts of plant drugs including sanguinaria, sugar, alcohol and water. For pneumonia, asthma, kidney, liver and stomach disorders, etc. Fraudulent therapeutic claims.—[*N. J. 19890; May, 1933.*]

**Capsules Insulans.**—Philadelphia Capsule Co., Philadelphia. For reducing blood sugars. Adulterated because insulin content was inert. Fraudulent therapeutic claims.—[*N. J. 19892; May, 1933.*]

**Eson.**—Pharmacy Products Inc., Wilmington, Cal. Composition: Essentially small amounts of carbolic acid and an iodine compound, with glycerine, alcohol (3.7 per cent) and water, colored with a red dye. For trench mouth, "athlete's foot," "feminine hygiene," etc. Fraudulent therapeutic claims.—[*N. J. 19893; May, 1933.*]

**Mrs. Dinsmore's Balsam.**—L. M. Brock & Co., Inc., Lynn, Mass. Composition: Essentially an antimony compound, such as tartar emetic, with extracts of plant drugs, alcohol, sugar and water. For coughs, hoarseness, whooping cough, etc. Fraudulent therapeutic claims.—[*N. J. 19897; May, 1933.*]

**Wiley's Alcoholic Extract of Cod Liver Oil.**—Hance Bros. & White, Inc., Philadelphia. Composition: Essentially compounds of phosphorus, iron, manganese, lime, potassium, quinine and strychnine, extracts of plant drugs, sugar, alcohol and water, flavored. For tuberculosis, scrofula, nervous prostration, etc.—[*N. J. 19900; May, 1933.*]

**Capsules Phenammo.**—Philadelphia Capsule Co., Philadelphia. Composition: 2.363 grains acetphenetidin in each capsule. For dysmenorrhea and influenza. Adulterated and misbranded. Fraudulent therapeutic claims.—[*N. J. 19892; May, 1933.*]

**Narco Syrup of Hypophosphites.**—Hance Bros. & White, Inc., Philadelphia. For tuberculosis, nervous disorders, etc. Fraudulent therapeutic claims.—[*N. J. 19900; May, 1933.*]

# Correspondence

## "PERNICIOUS ANEMIA AND TUBERCULOSIS"

*To the Editor:*—On reading Dr. Moses Barron's article in THE JOURNAL, May 20, one is left in doubt as to whether the conclusions reached in this study contribute as much to the consideration of this question as could be expected. Dr. Barron does not tell the number of tuberculosis cases present in this series of over 16,000 postmortem examinations, nor does he tell how careful a search was made to determine the actual existence of pernicious anemia in all the bodies examined. It is obvious, however, that over 2 per cent of the bodies examined and found to have pernicious anemia also showed active tuberculosis. It would be of value to know whether more than 330 cases of active tuberculosis were encountered in the whole series. One would like to know just what the incidence of pernicious anemia is in the general run of patients encountered in the general population, and there should be some comparison of the sort by which to gage one's studies. All are aware of the fact that many tuberculous patients having profound anemia are regarded as having that anemia secondary to tuberculosis. Undoubtedly there should be an effort made to encourage more careful blood studies in patients ill of tuberculosis. It is also possible that the forced feeding, administration of various tonics, heliotherapy and other factors contribute to the suspected paucity of pernicious anemia observations in connection with tuberculosis. During the period covered by Dr. Barron in which he observed two patients in his private practice showing both tuberculosis and pernicious anemia, my own observations have included at least three well established cases of this kind, one including the first case cited by Dr. Barron and seen with me in consultation, all three of these showing very chronic pulmonary tuberculosis. In this connection, it is well to bear in mind that pernicious anemia is usually more chronic in its course than tuberculosis, and these patients, such as the one cited, might die of tuberculosis before the pernicious anemia has run a very prolonged course. Dr. Barron's conclusions entitled 1 and 2 appear to be in conflict, and it is obvious that all conclusions with reference to the coexistence of the two diseases will be in conflict as long as the studies are incomplete, which they apparently are at the present time. I am inclined to agree with Dr. Barron in conclusion 2 with certain limitations. The other conclusions do not seem to be of value. At least, Dr. Barron has called attention to a condition which has interested many people who see much tuberculosis.

ALEXANDER JOSEWICH, M.D., Minneapolis.

[The letter was referred to Dr. Barron, who replies:]

*To the Editor:*—Dr. Josewich feels that the results were not as conclusive as might be desired. Unfortunately, no more dogmatic conclusions can be properly arrived at with the type of material under discussion. The thesis presented in the paper is that, from careful search in the literature together with the study of a large series of postmortem records, a combination of active tuberculosis, especially pulmonary tuberculosis, with pernicious anemia is exceedingly rare. All the available literature confirms this stand. As to the number of tuberculosis cases in this series, I have not the exact record, but in a study of 12,000 of these 16,000 cases there were found 318 cases of tuberculosis, which would approximate a total number for the 16,000 cases of about 475. Obviously an effort should be made to encourage more careful blood studies, but this should be done not only in tuberculous patients but in other patients as well.

I do not agree that the special tuberculous regimen of tonics, heliotherapy and forced feeding can explain the low incidence of pernicious anemia with tuberculosis. Certainly, since the work of Whipple, Minot and Murphy and his co-workers it has been established that more specific management is necessary to obviate pernicious anemia. I am interested in the statement that Dr. Josewich has seen three cases of this rare combination. Dr. H. Z. Giffin, in the discussion of this paper a few months ago, stated that he had gone over all the pernicious anemia case records of the Mayo Clinic and did not encounter a single case of active tuberculosis coexisting with pernicious anemia. This in itself would emphasize the rarity of such a combination. I do not believe that my conclusions 1 and 2 are in conflict. They simply state that active pulmonary tuberculosis and pernicious anemia rarely occur together but that whenever they do coexist the course of one does not seem to be modified by the other. I am unable to find any facts or proofs brought forth in the letter that invalidate in the slightest degree any of the conclusions arrived at in the paper.

MOSES BARRON, M.D., Minneapolis.

## THE PROBLEM OF THE SNELLEN SYMBOL

*To the Editor:*—The report of the Committee on Compensation Tables for Eye Injuries (THE JOURNAL, July 22) indicates anew the lack of unanimity in appraising loss of visual efficiency, and likewise an apparent disinclination on the part of physicians and insurance carriers, as well as of the various industrial boards, to accept the method of evaluating the Snellen symbol approved by the committee.

The crux of the problem is, of course, the correct interpretation of the value residing in the Snellen visual symbol. Numerous tables of values purporting to offer the solution of this phase of the subject have made their way into print at different times. In this connection it may be said that any method of determination which evolves from premises inexact by their nature cannot but lead, however ingeniously and mathematically, to an inaccurate, unsatisfactory conclusion.

Investigation of this question, some years ago (Gabriels, J. A. C.: The Snellen Symbol and Visual Value, *Arch. Ophth.* **55**:447 [Sept.] 1926) proved that the method of evaluating the Snellen symbol is as simple as the principle of Snellen test type construction and led to the conclusion that, properly to measure the value of vision on the basis of the Snellen test type, the essential character of monocular vision itself need only be borne in mind. Briefly, this then entails, in the first place, the recognition of a figure of more than one dimension, and hence one's concern is here not with the dimensions themselves but rather with the surface area corresponding. Now, the unit of surface being a square, its area is equal to the square of one of its dimensions. Given this linear unit, i. e., the visual angle or its equivalent in Snellen formula, and the corresponding unit of surface is easily deduced.

Secondly, it is essential to recognize that these Snellen formulas are inherently fractional units. Representing the relation or ratio of two numerical values, the Snellen formula 20/20, for instance, involves a relation or comparison of 20 to 20 feet, or one to one, or unity; Sn 20/30, 20 to 30 feet, or two thirds, unity being here 30/30, and not, as has been contended, 20/20; Sn 20/40, 20 to 40 feet, or one half, unity corresponding to 40/40, not 20/20; and so on. Subdividing, as they do, the unit of standard value, these Snellen formulas are merely expressions denoting one or more aliquot or equal parts of this unit of

standard value. It is quite evident that 20/30, 20/40 and so on are not aliquot or equal parts of unity represented by 20/20, but rather as expressed in 30/30, 40/40 and so on, respectively. And it may be noted, also, that the subtending angle remains unchanged—in other words, the 30 foot object at 30 feet, the 40 foot object at 40 feet, and so on, subtends an angle of 5 minutes of arc, just as in the case of the 20 foot object at a distance of 20 feet.

To ascertain for each Snellen symbol the equivalent visual angle in minutes of arc, one has simply to divide the denominator of the fractional unit by 4; that is, the corresponding angle in minutes of arc is always one fourth.

This method is simple and scientifically sound, has the advantage of flexibility, permitting varying sizes of test types and distances, and is adapted to rapid calculation. Furthermore, it lends itself admirably to universal usage, because it is intelligible not only to the general physician but also to the layman himself, and its resulting ratings are, moreover, characteristically in alinement with the mental conception of ophthalmologists as to the values attaching to the Snellen visual symbol.

J. A. C. GABRIELS, M.D., Albany, N. Y.

## EFFECTS OF METHYLENE BLUE ON CARBON MONOXIDE POISONING

*To the Editor:*—In an article on the effects of methylene blue in carbon monoxide poisoning, Haggard and Greenberg (THE JOURNAL, June 24, p. 2001) made the following statement relative to my controls:

> It is noteworthy that in these observations of Brooks the control rats were not injected even with saline solution.

Attention is called to the fact that these controls were made, as stated in the *American Journal of Physiology* (**102**:147 [Oct.] 1932) as follows: "Ringer-glucose injections alone had no effect on the time of recovery."

It might be explained that Ringer-glucose is a saline solution.

MATILDA MOLDENHAUER BROOKS,
University of California, Berkeley, Calif.

## PERCENTAGE OF POSTMORTEM EXAMINATIONS OF HOSPITALS

*To the Editor:*—Dr. Reginald Fitz (THE JOURNAL, July 22, p. 253) properly calls attention to the necessity and possibility of each hospital maintaining a high postmortem percentage. When autopsies are few, scientific morale is likely to languish and the care of patients becomes routinized. Dr. Fitz mentions the case of the Philadelphia General Hospital, an institution of 2,000 beds which I had the honor to direct for a decade and a half. There, a percentage of 10 rapidly mounted to 55 when postmortems were seriously sought. At the Jewish Hospital, Philadelphia, an institution of 400 beds, an autopsy percentage of 10 in the course of two months of endeavor rose to 50 and has ranged from 40 to 70 during the several months of the year, averaging in excess of 50 for the twelve months.

The sole responsibility of securing postmortem permissions should not be left to the pathologist. The clinical staff should be, if possible, even more interested. At the institution last mentioned, a weekly conference at which the whole intern and resident staffs are in attendance is perhaps the most effective measure in securing autopsy permissions. At this meeting the clinical and pathologic aspects of each institutional death during the week are thoroughly discussed. When no autopsy has been secured, the reasons for this failure are sought. Competitive lists of percentages for interns, visiting physicians and departments are prepared and posted monthly. There is no geographic, racial or economic excuse for a low autopsy percentage. Lack of interest or of information as to the proper methods to employ are alone causative. JOSEPH C. DOANE, M.D., Philadelphia.

# *Queries and Minor Notes*

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

### MARRIAGE IN CRETINISM AND THYROID IN PREGNANCY

*To the Editor:*—In THE JOURNAL, April 8, page 1132, in answer to a query concerning marriage in cretinism, the statement is made that during pregnancy the patient might need less thyroid when the fetal thyroid begins to assume its function. I should like to have the one who wrote the answer cite the clinical or experimental reports on which this statement is based. The baby's thyroid must be considered as well as that of the mother. In 1896, Halstead (*Johns Hopkins Hosp. Rep.* **1**: 373) found that, if the thyroid of a pregnant female dog was removed, the puppies were all born with goiters. In a study of goiter, which was quite extensive, a few years ago, I found that in those families in which practically all the children had goiters the mother had a thyroid which, if not somewhat deficient at all times, was deficient during her pregnancy. I found further that, if these mothers were given desiccated thyroid so as to maintain the basal metabolic rate at the normal for a pregnant woman, they gave birth to children without goiters, confirming in the human being the work of Halstead.

It is true that a woman with a thyroid deficiency may have a slight rise in the basal metabolic rate sometimes as the pregnancy progresses. It will be found that the basal metabolic rate of a pregnant woman should steadily rise during the pregnancy to not far from plus 20 at the time of delivery, and many consider it not abnormal if it rises to plus 30. By comparing the metabolic rates in the women who have some thyroid deficiency with the normal it will be found that, practically always in those cases in which there is a rise, the rise is not in proportion to the normal rise that the women should have. I have followed a considerable number of women with either primary basal metabolic rate deficiency or a secondary deficiency developing during pregnancy, and by giving desiccated thyroid and controlling the dose with repeated basal metabolic rates I have seen these women deliver babies with a normal thyroid without a single exception. If the basal metabolic rate is not controlled by the repeated determinations, they are apt to get too much or not enough of the desiccated thyroid. I am advising in this group of cases that the basal metabolic rate be taken at frequent intervals and sufficient desiccated thyroid given to maintain the rate for a normal pregnant woman, month by month, as the pregnancy goes on. At the time of delivery I aim to have the rate between plus 15 and plus 20.

J. EARL ELSE, M.D., Portland, Ore.

ANSWER.—The belief that the endocrine glands of the fetus function during pregnancy is held generally, and that they may make up some deficiency of the mother's glands also has many supporters. Carlson, von Noorden and Holzbach (*Zentralbl. f. Gynäk.*, Oct. 9, 1926, p. 2610) try to explain the occasionally observed improvement in diabetic patients in the last trimester of pregnancy on this ground. Halstead's experiment tends to prove this action for the thyroid gland, and many years ago a surgeon connected with one of the meat packing industries in Chicago said he had observed conditions in slaughtered cattle which indicated to him that the thyroid of the fetus acted vicariously for that of the mother. Ukita (*Acta scholae med. univ. imp. Kioto* **3**:287 [Sept. 1] 1919, abstr. THE JOURNAL, Jan. 17, 1920, p. 213) and Carlson and Drebin of Chicago showed that the thyroids of rabbit and dog fetuses from thyroidectomized mothers were enlarged, but the signs in the fetuses pointed as often to cretinism as to hyperthyroidism.

On the other hand, in cases of struma coincident in mother and child one might also think that the fetal struma was hereditary, not the result of unbalanced exchange of thyroxine or whatever incretions cause enlargement of the thyroid.

In strumigenic districts, both mother and fetus may show the effects of the environment.

In pregnancy, enlargement of the thyroid may be colloid only. White and Melchoir (Halban-Seitz **8**:732) found that children of mothers with exophthalmic goiter sometimes had struma congenita.

Since it is known that the thyroid is under the influence of other endocrine glands, particularly the hypophysis, and since the actions of the incretions of the thyroid are not fully understood, it is somewhat premature to draw hard and fast lines governing treatment. Further, the basal metabolic rating is not an infallible guide in treatment.

Cornell and Baer have found that during pregnancy the basal metabolism rate may go to 35 plus normally, but at the University of Chicago Sandiford found no differences from the nonpregnant state. But the test is the best single one available and in the cases of cretinism during pregnancy ought to render valuable service, if not absolute conviction.

It is easy to give overdoses of thyroid during pregnancy.

In the early months the dose heretofore found needful may be continued. Then if the basal metabolism rate shows that the normal increase is not taking place—that the mother's

thyroid is not meeting the demands of pregnancy—the dose may be augmented. On the other hand, it may happen that pregnancy will stimulate a torpid gland and less medication will be required. Should in any case the basal metabolism rate exceed 20 plus, the danger of overstimulating the baby's as well as the mother's thyroid would be an indication to lessen the amount of thyroid administered.

### LUPUS ERYTHEMATOSUS

*To the Editor:*—What is the best treatment of lupus erythematosus? Of what value is gold sodium thiosulphate in the treatment of this condition? What are the most important diagnostic criteria in this condition? Are fine, white scales and pruritus likely to occur? In what conditions is the butterfly pattern on the face apt to occur? Are discrete nummular areas likely to be found at the periphery of the area of involvement? Are the auricle and external auditory canal liable to become involved? Please omit name. M.D., Connecticut.

ANSWER.—The best treatment for lupus erythematosus depends on the patient. What benefits one may harm the next one. Gold sodium thiosulphate is the gold salt used more than any other in this country, and gold salts are used at the present time more than any other treatment for lupus erythematosus. Their value depends largely on the physician's ability to judge when they are indicated, to choose the proper dosage and to take precautions against complications. They are most useful in the common discoid form of the disease, of which the following are the most important diagnostic criteria:

1. Flat papules, sometimes macules, enlarge peripherally and become covered with adherent gray scales. When the scales are removed they leave pits like enlarged follicles in the skin, and on the under side of the scale are horny pegs corresponding to these pits.

2. On further development of the lesion, atrophy appears at the center without any ulceration. Sometimes traces of the pits can be seen in the scar.

3. On the nose, patches of small gray scales, plugging pits, give a rough, stippled appearance.

4. On the scalp, similar lesions develop central scars, often surrounded by a stippled zone. These are usually small.

5. The distribution is on the face, scalp, neck and ears, less often on the backs of the fingers and the center of the upper chest, in approximate symmetry.

Fine white scales are seldom seen. Pruritus may occur with the onset of new lesions or the exacerbation of old ones but is not a common feature. The butterfly pattern is characteristic for the discoid form of lupus erythematosus and for acne rosacea, though in the latter involvement of the glabella and the chin often make a cross-shaped figure. Lupus vulgaris that begins at the center of the face and progresses equally on the two sides may produce a butterfly-shaped patch, or tertiary syphilis under the same conditions may do it.

Discrete nummular lesions may occur near the border of a large patch but are no more likely to be found there than in more distant parts. They are larger than the lesions of lupus vulgaris, which characteristically occur beyond the edge of the main patch, and they enlarge by peripheral extension, merging with the larger patch and forming a coarsely gyrate figure in lupus erythematosus. The lupus vulgaris patch enlarges only by inclusion of small lesions at the border.

The auricle is commonly involved in lupus erythematosus and the process may extend to the auditory canal.

### BELL'S FACIAL PALSY

*To the Editor:*—A woman, aged 26, weighing 104 pounds (47 Kg.), has been suffering from what appears to be Bell's palsy on the right side of the face for the past four months. She has no other complaints except this distressing and ugly condition. Her teeth are in good shape and there are no foci of infection apparently present. Would you give some information as to the causation of this condition, the prognosis and treatment, medical and electrical? Please discuss in detail the electrical treatment, if of any definite value, and internal medication, if of any definite value. Kindly omit name. M.D., New York.

ANSWER.—Bell's palsy is sometimes associated with focal infections but also occurs from infections that sometimes seem to be epidemic. Rarely, this condition has been reported in association with syphilis. The outlook for more or less complete recovery is usually good. The acute inflammation is of short duration and the damage is done before the patient comes under observation. Recovery depends on the regeneration of the fibers of the nerve. Treatment must be directed toward maintaining the nutrition and functional capacity of the muscles and avoiding contractures while the process of regeneration is taking place. Stimulation of the muscles seems also to have some influence in promoting regeneration of the nerves. The most important measures are those of massage and electrical stimulation, though efforts have been made also to provide some form of splinting to prevent deformity of the face. The form of electrical stimulus to use is that which causes contraction of the muscles. Unless the damage is mild, when it will recover rapidly, the nerve itself is inexcitable to any stimulus. The muscle fibers as a rule are not affected by the faradic or interrupted current. As recovery of the nerve develops, excitability to faradism will return. The current to be used is the constant or galvanic current, applied directly over the individual muscles. If this fails to cause contraction of the muscles, it means that the muscles themselves are undergoing degeneration. In using the galvanic current, it is well to apply the anode over the muscle points; contraction is caused by alternately making and breaking the circuit, only sufficient current being used to cause contraction. Each muscle must be treated separately. Starting with five or ten minutes, the treatments may be continued for the muscles as a whole to about twenty minutes at a sitting, two or three times a week. Too prolonged treatment may do harm by causing fatigue. Massage may be given daily.

### "CAR SICKNESS"

*To the Editor:*—A woman, aged 29, with no organic lesions of any kind, is unable to do any traveling. As soon as she gets on a street car or bus or into an automobile or railroad train, she becomes dizzy and then nauseated and starts vomiting. She has tried many things to overcome it but without effect. This disturbance began five years ago, while she was pregnant, and has continued ever since. She has had no pregnancies since. What can be done to relieve her? Are there any recent reports about cases of this type? Omit name, please. M.D., Illinois.

ANSWER.—This condition, known as "car sickness" or "train sickness," is generally ascribed to the necessity for rapid ocular adjustments, as well as some labyrinthine disturbance. It is symptomatically best treated by reclining, with the eyes closed. As it is commonly induced by errors of refraction, especially forms of astigmatism, causing unequal strain of muscular balance, proper correction of the eye disturbance should go quite a way toward relieving the trouble in a more radical manner. It is probable that there is back of all this a neurosis, vertigo being a not uncommon symptom in the "anxiety neurosis." Like all neuroses, this one is probably due to a wrong mode of living and, to correct it, determination of what is wrong in the patient's hygiene of life is the prime necessity. The history suggests that, in the case reported, this may be found in the sex life of the patient.

### HAZARDS OF ACETYLENE WELDING

*To the Editor:*—I have a patient who complains of headaches, vertigo, and a choking sensation in the throat. He has pain, tenderness and swelling over the sternocleidomastoid muscle and the biceps brachii muscle on the left side. There is a tremor and evidence of myasthenia present in these muscles. The skin over them is analgesic and scaling. Two years ago the patient had the same syndrome on the right side and states that it went on to actual paralysis. He works in a machine shop next to an acetylene welder. What poisons are present in a room where acetylene welding on metals is being performed? Can acetylene gas or any sulphur compound cause this syndrome? Is there any state agency that investigates and corrects injurious working conditions? How would you treat such a case? It was diagnosed as multiple neuritis by a physician two years ago. I will greatly appreciate any advice you offer. Please omit name. M.D., Illinois.

ANSWER.—To some extent the hazards of acetylene welding depend on the particular metals being manipulated. The burning off of a coating of zinc (galvanizing) with an acetylene torch, in connection with welding work, readily may give rise to acute zinc poisoning. The "burning" of lead battery parts (not precisely a welding operation) with an acetylene torch might occasion lead poisoning. Still other metals so treated may produce their characteristic form of poisoning in exposed workers.

Acetylene itself is regarded as nontoxic, except as a simple asphyxiant. However, it may contain as impurities hydrogen sulphide or other sulphur compounds—arseniureted hydrogen—and, in the process of application, carbon monoxide may be produced.

"Headache, vertigo, and a choking sensation in the throat," are common results of exposure to gases and fumes arising from acetylene welding. The welder is the worker usually affected.

It is conceivable, but not probable, that the severe damage described in the query might be traced to arsenic as the cause, possibly to lead, and remotely to carbon monoxide. It is far more likely that these manifestations are unrelated to work as a direct cause. Responsibility for the investigation of industrial

hazards does not in all states devolve on the same department. An inquiry addressed to the state department of health may be expected to establish the source of investigative services.

Treatment largely will be determined by the cause of the disorder. Until a precise causative agent is determined, treatment appropriate for multiple myositis or neuritis is probably indicated.

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### NEGATIVE WASSERMANN TESTS IN SYPHILIS

*To the Editor:*—In the March *Bulletin of the Academy of Medicine of Cleveland* there appears the following statement: "About half the cases of syphilis seen by the average clinician present themselves with negative Wassermann credentials and have to be recognized by other means or go undetected." I believe the average clinician sees relatively few early primary syphilitic lesions before the Wassermann and Kahn tests are positive. I assume, therefore, that the writer of the statement believes that syphilis in its later stages is excessively common with a negative Wassermann reaction. Is this true? Is the Wassermann test positive in only 50 per cent of the cases of syphilis?

RICHARD E. STIFEL, M.D., Cleveland.

ANSWER.—Considering only late syphilis, there are certain cases more prone than others to present negative blood reactions. Among them are the late congenital cases, late bone syphilis, cardiovascular syphilis and tabes dorsalis. In these, 40 per cent of negative blood Wassermann reactions seems to be generally accepted by syphilologists as high enough. These cases represent, however, only part of late clinical syphilis. In tertiary skin cases, for instance, the percentage of negative blood Wassermann cases is much lower, not over half this figure. Add to this fact the large number of clinically undetectable latent cases in which the only evidence of disease is a persistently positive blood Wassermann or positive spinal fluid test and the statement is weakened still further. While the writer quoted may have exaggerated, his point is a good one: clinical observation is more important in diagnosis than serologic tests and they should not be neglected because the serologic tests are easier.

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### APHTHOUS STOMATITIS AT MENSTRUAL PERIOD

*To the Editor:*—A married woman, aged 25, develops an aphthous stomatitis just prior to the menstrual flow each month. The aphthae appear on the inner side of the lips, on the cheeks and on the hard palate. They are for the most part about 0.5 cm. in diameter. They are usually present about three or four days and heal before the menstrual flow ceases. I have not been able to find any connection in the literature between menstruation and aphthous stomatitis. Can you give me any information and can anything be done to prevent the recurrence from month to month?

W. P. CRANE, M.D., Holstein, Iowa.

ANSWER.—There is a distinct connection between the female genital functions and the mouth. Occasionally, at puberty in girls between 12 and 14 years old, edema and swelling of the gums occur. This results in loosening of the teeth and in some instance even to a moderate periostitis. These manifestations disappear spontaneously with the onset of the menstrual flow. More frequent, however, are the changes that occur in the mouth during normal or abnormal menstruation. Some women can predict the onset of menstruation because they experience toothache regularly just before they begin to bleed. These aches may persist during the flow, but they always subside with the cessation of bleeding. Cases of catarrhal and aphthous stomatitis have been described by Scheff (Handbuch der Zahnheilkunde, ed. 3, Vienna, 1910). A case is reported by Davis (*Medical Times*, May, 1898) in which a woman, aged 35, experienced a stomatitis for three years. The symptoms appeared five days before the onset of the menstrual flow and increased until the end of the bleeding. A cure was obtained by removing both ovaries, which were cystic. This is heroic therapy for a woman only 35 years old and is entirely unwarranted. Unfortunately, no certain way to prevent the monthly recurrence of aphthous stomatitis is known other than by eliminating ovulation.

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### CEREBRAL ARTERIOSCLEROSIS IN A DIABETIC PATIENT

*To the Editor:*—A man with diabetes has a cerebral irritation causing his leg and arm to draw up or jerk at times. My opinion is that some calcification of the cerebral arteries exists, as at times the pressure goes up to 170 systolic. Moderate dieting keeps the urine sugar free. My question is whether by increasing carbohydrates, using insulin, I could reasonably expect the disagreeable jerks to diminish.

W. H. CAINE, M.D., Antwerp, Ohio.

ANSWER.—Granting that the patient has a sclerosis of the cerebral arterioles, with a cerebral irritation causing the leg and arm to jerk, this has no necessary relationship to the diabetic state, except so far as the latter condition might have advanced the vascular disease. There is, therefore, no reason for expecting that an increased carbohydrate intake, with the use of insulin if necessary, would modify the cerebral condition. However, in view of the fact that the ketogenic diets have successfully been used to decrease the cerebral irritability in such conditions as epilepsy, it might be possible to treat both the diabetes and the cerebral manifestations by the use of a high fat diet. Should this treatment be adopted, it will be necessary to watch the patient carefully to avoid the dangers of excessive ketosis. And if, as seems likely from the question, the patient is an elderly person with cardiovascular disease, the restriction of carbohydrate in the diet may have a deleterious action as regards the functional state of the heart (Soskin, Samuel; Katz, L. N.; Strouse, Solomon, and Rubinfeld, S. H.: Treatment of Elderly Diabetic Patients with Cardiovascular Disease, *Arch. Int. Med.* **51**:122 [Jan.] 1933. Strouse, Solomon; Soskin, Samuel; Katz, L. N., and Rubinfeld, S. H.: Treatment of Older Diabetic Patients with Cardiovascular Disease, THE JOURNAL, May 14, 1932, p. 1703). In deciding on a course of action, therefore, the discomfort or disability caused by the cerebral irritation should be carefully weighed against the difficulties and possible dangers of a high fat diet in the type of case described.

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### TREATMENT OF SYPHILIS AND SYPHILOPHOBIA

*To the Editor:*—A man, aged 25, attempted suicide. He was being treated for gonorrhea and felt that there was no cure. He has a watery discharge from the nose of about two months' duration, "stomach trouble" which he cannot describe satisfactorily other than as an indefinite rumbling, and what is apparently a water brash coming into his mouth, a condition which he attributes to abnormal sexual acts. He is absolutely convinced that his case is incurable and that he has been responsible for infecting also his wife, his 4 year old daughter and both of his parents, with whom he has been living. He has a four plus Wassermann reaction. Other than these obsessions and an extremely morose attitude, there are no mental symptoms. His memory, reasoning and mental ability are otherwise normal. I have made a diagnosis of acute syphilis and syphilitic meningitis. I am treating him with mercury rubs and potassium iodide and bismuth sodium tartrate intramuscularly every two days. I am withholding all forms of arsenic at this time. He has shown no improvement in spite of the fact that his nose and throat have been examined by a specialist and found to have nothing wrong. There is absolutely no other abnormal physical finding. Do you agree with my diagnosis and, if so, what would be your prognosis and what change in treatment would you recommend? Please omit name and address.

M.D., New York.

ANSWER.—From the facts presented there seems little justification for assuming that this patient has either neurosyphilis or syphilitic meningitis. The diagnosis of the latter is made largely from spinal fluid examinations, particularly excessively high cell counts, and there is nothing in the behavior of the patient to point necessarily to a syphilitic involvement of the brain. Exactly similar mental states are seen in the presence of syphilophobia, in which every clinical and serologic investigation proves that the patient is not the victim of the infection but simply has an overpowering fear of such an infection.

In view of the treatment that has already been instituted, it seems unnecessary to withhold arsphenamine, as the present conception of the treatment in syphilis demands that arsphenamine be part of the treatment schedule. It is suggested that a spinal fluid examination is in order and that the patient's treatment be intensified by the addition of an active arsphenamine.

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### DETECTIONS OF SOURCE OF HAIR

*To the Editor:*—Owing to a peculiar angle of a murder case, the question of hair is involved. The hair that will be offered in evidence, it is claimed, came from a horse's ankle. This hair compared in color to the hair of the dead man. Is there any way, with the exception of taking the hair from the head of the deceased and comparing it with a hair from the ankle of the horse, to tell which is which? In other words, is there any way to distinguish horsehair from human hair? Please omit name.

M.D.

ANSWER.—The examination of hairs for medicolegal purposes is accomplished by the use of the compound microscope, and the observations should be substantiated by photomicrography or picture taken through the microscope. By this method it is possible to distinguish and identify the different types of hair of the entire animal kingdom.

Human hair cannot be confused with any hair from the lower animals, and each of the types of animals may be separated one from another by this process.

In a case in which a shaft of hair is suspected to have come from a certain animal, it is a simple matter to prove the fact by securing hair from that animal and submitting it to microscopic examination. It must be borne in mind that there are different kinds of hair on the four-footed animals; i. e., whiskers,

tail, mane, inner and outer body-hair. The inner hair is the wool hair and the outer hair the protective hair. These facts are mentioned in order that care may be exercised by those who secure specimens for comparison purposes.

A good microscopist should be consulted in the matter and enlarged photomicrographs should be prepared for presentation in court. The total magnification should be at least 400 diameters.

### USE OF SCARLET FEVER ANTITOXIN

*To the Editor:*—I have a few cases of scarlet fever and wish to know about the Dick serum for prevention and cure of scarlet fever. It is stated here that it is no good. Where can I get it if it is all right? Please answer at once. J. O. HELM, M.D., New Florence, Mo.

ANSWER.—Since scarlet fever antitoxin was described in 1924 there have been published many reports concerned with clinical results obtained from the use of this antitoxin. The various authors agree that antitoxin is of definite value in the treatment of scarlet fever. It not only combats the toxic element of the disease but, if given early, reduces complications. The effect of administration of antitoxin is most marked in severe cases, but Hunt found in a series of 848 mild cases of scarlet fever that the incidence of complications was reduced by two thirds through administration of antitoxin. In a series of more than 2,000 cases the same author found there was a definite relation between the time of administration of the antitoxin and the incidence of complications, complications being fewest in the cases in which the serum was given on the first day of the disease.

### SYMPTOMS OF X-RAY BURNS

*To the Editor:*—A colleague of mine who does considerable x-ray work complains of his hands. There is no dermatitis or other visible evidence of trouble but he says that his fingers burn or tingle and at times feel numb. Please advise me whether this sounds like any serious x-ray burns. M.D., Virginia.

ANSWER.—While it is usually accepted that an erythematous reaction precedes structural tissue changes, it is also a fact that hyperesthesia, itching, pigmentation, loss of hairs and brittleness of the nails might result from repeated, even though small exposures to the x-rays. The symptoms described should be regarded with suspicion; also other possible causes for similar symptoms should be considered.

### CHAPPING AND PEELING OF LIPS

*To the Editor:*—Of what diagnostic significance are chapped and peeling lips in a young woman whose only other sign of any note is a sterility over a period of ten years? M.D., Wisconsin.

ANSWER.—Chapped and peeling lips in a young woman with sterility are of no diagnostic significance. It may be a simple dermatitis due to sensitization to some chemical ingredient in a lip stick, tooth paste or mouth wash. It might also be an actinic cheilitis from the effects of wind and sun. So-called cheilitis exfoliativa is essentially a form of seborrheic or exfoliating eczema of the lips.

### "PELVIC PAIN DURING COITUS"

*To the Editor:*—There has been a long standing fallacy of medicine to arrive at medical diagnosis in certain instances by a process of excluding other possible diagnoses, and this has been particularly the case in concluding the presence of minor psychoses, such as hysteria and neurasthenia, in explanation of internal medical symptoms of obscure causation. This method of diagnosis, on the one hand, assumes too complete adequacy of scientific knowledge and examining technics for the conditions excluded and, on the other hand, implies that there are no positive signs for the pathologic state which is by exclusion blamed for the symptoms. The process of exclusion undoubtedly has its place in diagnosis, but the difficulty is that it has been resorted to so blindly and has been so soothing to the baffled diagnostician that psychiatrists are constantly having to undo these diagnoses and to apologize whenever on a legitimate basis the diagnosis of hysteria or neurasthenia is made. It would be helpful to the scientific advancement of all the fields concerned if in Queries and Minor Notes THE JOURNAL could be particularly critical of replies that employ this process of diagnosis by exclusion. The frequency with which psychiatric problems enter this column is a reflection of the inadequacy of the preparation of physicians in psychiatry, and it is my feeling that anything that can be done to deprive the physician of the use of neuroses as a screen for diagnostic embarrassment will not only force a facing of unknowns but will bring about an appreciation of the fact that psychiatric diagnoses, just as those in any other sphere, rest on positive observations.

The occasion for this particular appeal is the query in THE JOURNAL, July 8, page 158—Pelvic Pain During Coitus.

GEORGE S. STEVENSON, M.D., New York,
Director, Division on Community Clinics,
National Committee for Mental Hygiene.

# Council on Medical Education and Hospitals

## COMING EXAMINATIONS

AMERICAN BOARD FOR OPHTHALMIC EXAMINATIONS: Boston, Sept. 19. Sec., Dr. Wm. H. Wilder, 122 S. Michigan Ave., Chicago.

AMERICAN BOARD OF DERMATOLOGY AND SYPHILOLOGY: *Written.* Boston, Chicago, Cleveland, New York, Philadelphia, St. Louis and San Francisco, Oct. 28. *Oral.* New York, Dec. 15-16. Sec., Dr. C. Guy Lane, 416 Marlboro St., Boston.

AMERICAN BOARD OF OBSTETRICS AND GYNECOLOGY: *Written (Group B Candidates.* The examinations will be held in various cities of the United States and Canada, Dec. 9. Application necessary before Nov. 1. Sec., Dr. Paul Titus, 1015 Highland Bldg., Pittsburgh.

AMERICAN BOARD OF OTOLARYNGOLOGY: Boston, Sept. 16. Sec., Dr. W. P. Wherry, 1500 Medical Arts Bldg., Omaha.

ARIZONA: Phoenix, Oct. 3-4. Sec., Dr. J. H. Patterson, 320 Security Bldg., Phoenix.

CALIFORNIA: *Regular.* Sacramento, Oct. 16-19. *Reciprocity.* Sacramento, Oct. 16. Sec., Dr. Charles B. Pinkham, 420 State Office Bldg., Sacramento.

COLORADO: Denver, Oct. 3. Sec., Dr. Wm. Whitridge Williams, 422 State Office Bldg., Denver.

CONNECTICUT: *Basic Science.* New Haven, Oct. 14. *Prerequisite to license examination.* Address State Board of Healing Arts, 1895 Yale Station, New Haven.

GEORGIA: Atlanta, Oct. 10. Joint Sec., Mr. R. C. Coleman, 111 State Capitol, Atlanta.

IDAHO: Boise, Oct. 3. Dir., Mr. F. L. Cruikshank, Boise.

ILLINOIS: Chicago, Oct. 17-19. Supt. of Regis., Mr. Eugene R. Schwartz, Springfield.

MICHIGAN: Lansing, Oct. 10-12. Sec., Dr. J. E. McIntyre, 202-3-4 Hollister Bldg., Lansing.

MINNESOTA: *Basic Science.* Minneapolis, Oct. 3-4. Sec., Dr. J. Charnley McKinley, 126 Millard Hall, University of Minnesota, Minneapolis. *Regular.* Minneapolis, Oct. 17-19. Sec., Dr. E. J. Engberg, 350 St. Peter St., St. Paul.

MISSOURI: Kansas City, Oct. 17-19. State Health Commissioner, Dr. E. T. McGaugh, State Capitol Bldg., Jefferson City.

MONTANA: Helena, Oct. 3. Sec., Dr. S. A. Cooney, 7 W. 6th Ave., Helena.

NEBRASKA: *Basic Science.* Lincoln, Oct. 3-4. Dir., Bureau of Examining Boards, Mrs. Clark Perkins, State House, Lincoln.

NEW HAMPSHIRE: Concord, Sept. 14-15. Sec., Dr. Charles Duncan, State House, Concord.

NEW JERSEY: Trenton, Oct. 17-18. Sec., Dr. James J. McGuire, 28 W. State St., Trenton.

NEW MEXICO: Santa Fe, Oct. 9-10. Sec., Dr. P. G. Cornish, Jr., 221 W. Central Ave., Albuquerque.

NEW YORK: Albany, Buffalo, New York and Syracuse, Sept. 25-28. Chief, Professional Examinations Bureau, Mr. Herbert J. Hamilton, Room 315 Education Bldg., Albany.

RHODE ISLAND: Providence, Oct. 5-6. Dir., Dr. Lester A. Round, 319 State Office Bldg., Providence.

TENNESSEE: Memphis, Sept. 29-30. Sec., Dr. H. W. Qualls, 130 Madison Ave., Memphis.

WISCONSIN: *Basic Science.* Madison, Sept. 23. Sec., Prof. Robert N. Bauer, 3414 W. Wisconsin Ave., Milwaukee.

## Florida June Examination

Dr. William M. Rowlett, secretary, Florida State Board of Medical Examiners, reports the examination held in Jacksonville, June 12-13, 1933. Forty-two candidates were examined, 40 of whom passed and 2 failed. The following colleges were represented:

| PASSED | | | |
|---|---|---|---|
| College | | Year Grad. | Per Cent |
| College of Medical Evangelists | | (1925) | 82.4 |
| Howard University College of Medicine | | (1929) | 87.3 |
| Atlanta School of Medicine | | (1912) | 75.5 |
| University of Georgia Medical Department | | (1930) | 83.8, (1932) 85.6, (1933) 79.6 |
| Loyola University School of Medicine | | (1933) | 85.4, 85.7* |
| Northwestern University Medical School | | (1917) | 81.3 |
| Indiana University School of Medicine | | (1921) | 80.2, (1932) 81.8 |
| Tulane University of Louisiana School of Medicine | | (1915) | 81.4, 86.4, (1925) 83.4, (1929) 85.7, (1932) 84.6, 85.4, 86.5, (1933) 85.5, 88.3 |
| College of Physicians and Surgeons of Baltimore | | (1903) | 75.3 |
| Johns Hopkins University School of Medicine | | (1914) | 84.8 |
| University of Maryland School of Medicine | | (1912) | 77 |
| Univ. of Maryland School of Med. and Coll. of P. and S. | | (1930) | 89.3 |
| Harvard University Medical School | | (1932) | 84 |
| Long Island College Hospital | | (1884) | 75 |
| Univ. of Pennsylvania School of Medicine | | (1920) | 79.5, (1928) 82.3 |
| University of Pittsburgh School of Medicine | | (1920) | 85.9 |
| Med. Coll. of the State of South Carolina | | (1931) | 78.7, (1932) 83.5 |
| Meharry Medical College | | (1933) | 83.4 |
| Univ. of Tennessee College of Medicine | | (1932) | 78.2, 81.8, 86.7 |
| University of the South Medical Department, Tennessee | | (1908) | 75 |
| Vanderbilt University School of Medicine | | (1919) | 84 |
| Medical College of Virginia | | (1920) | 87.6 |
| University of Toronto Faculty of Medicine | | (1927) | 88.3 |
| McGill University Faculty of Medicine | | (1931) | 87.9 |

| FAILED | | |
|---|---|---|
| College | Year Grad. | Per Cent |
| Georgia College of Eclectic Medicine and Surgery | (1893) | 58.8 |
| University of Louisville Medical Department | (1898) | 63.5 |

* This applicant has completed his medical course and will receive an M.D. degree on completion of his internship.

### Minnesota June Report

Dr. E. J. Engberg, secretary, Minnesota State Board of Medical Examiners, reports the oral, written and practical examination held at Minneapolis, June 20-22, 1933. The examination covered 12 subjects and included 60 written questions. An average of 75 per cent was required to pass. Thirty-six candidates were examined, all of whom passed. Two physicians were licensed by reciprocity and 1 by endorsement. The following colleges were represented:

| PASSED | | |
|---|---|---|
| College | Year Grad. | Per Cent |
| Northwestern University Medical School | (1932) | 82.1, 85.4 |
| Tulane University of Louisiana School of Medicine | (1931) | 89 |
| Johns Hopkins University School of Medicine | (1931) | 88.3 |
| Harvard University Medical School | (1931) | 87 |
| University of Minnesota Medical School | (1932) | 84, 84.2, 87.1,* 87.6,* (1933) 80.6, 82.3,* 83.1, 83.3,* 84.1, 84.2, 84.4, 84.6,* 85.2, 85.2, 85.5, 86.6, 87, 87.1,* 88, 88.1, 88.5, 88.5,* 91.6 |
| Creighton University School of Medicine | (1933) | 86.5 |
| University of Nebraska College of Medicine | (1930) | 87.4 |
| Ohio State University College of Medicine | (1930) | 90.1 |
| University of Cincinnati College of Medicine | (1925) | 83.1 |
| University of Virginia Department of Medicine | (1929) | 90.4, 90.6 |
| Marquette University School of Medicine | (1933) | 84.5 |
| University of Wisconsin Medical School | (1932) | 88.2 |

| LICENSED BY RECIPROCITY | | |
|---|---|---|
| College | Year Grad. | Reciprocity with |
| University of Michigan Medical School | (1929) | Michigan |
| University of Nebraska College of Medicine | (1932) | Nebraska |

| LICENSED BY ENDORSEMENT | | |
|---|---|---|
| College | Year Grad. | Endorsement of |
| University of Minnesota Medical School | (1932) | N. B. M. Ex. |

*This applicant has received an M.B. degree and will receive an M.D. degree on completion of internship.

## *Book Notices*

**Obstetrics and Gynecology.** Edited by Arthur Hale Curtis, M.D., Professor and Head of the Department of Obstetrics and Gynecology, Northwestern University Medical School. Volume I. Cloth. Price, $35.00 per set of 3 volumes and index. Pp. 1165, with 515 illustrations. Philadelphia & London: W. B. Saunders Company, 1933.

**Obstetrics and Gynecology. Volume II: Pathology of Labor and of the Puerperium, Operative Obstetrics, Infectious Processes, Tumors.** Edited by Arthur Hale Curtis, M.D., Professor and Head of the Department of Obstetrics and Gynecology, Northwestern University Medical School. Cloth. Price, $35 per set of three volumes and index. Pp. 1135, with 1103 illustrations. Philadelphia and London: W. B. Saunders Company, 1933.

The first two volumes of this system, which is to include eventually three volumes and a separate desk index, are now available. Eighty contributors, selected by the editor-in-chief, have given of their best for this work. The volumes begin with a historical account by Dr. Irving Cutter, tracing the development of obstetrics and gynecology from the earliest times and including some excellent brief biographic notes as well as numerous illustrations. There follows a consideration of the anatomy of the female genital tract, then a discussion of the physiology of the reproductive organs, and in the third section the morphology and physiology of pregnancy. Then the physiology of the birth process, labor, and the pathology of pregnacy complete volume I.

In the section on anatomy, the drawings represent the finest type of anatomic art and make clear the relationships of organs and tissues. The articles on menstruation by Novak are an excellent contribution, summarizing his numerous writings on this topic as well as the material available from the work of others. His summary of our knowledge of the physiology of menstruation indicates, however, that even this function is not as yet fully understood. Apparently, most gynecologists incline to view that the withdrawal of the corpus luteum influence is the responsible factor in bringing on normal menstrual bleeding, presumably by its content of progestin and folliculin. Novak feels that folliculin is the most important inhibiting influence.

The consideration of the reproductive cycle in animals is a valuable chapter, but its immediate practical importance to the practitioner of gynecology and obstetrics is hardly apparent. The section on pregnancy gives a fine consideration of the embryo by Drs. Hartman and Patten, a most practical section for the medical student, with less emphasis on the development of the chick and lower species and with practically all the emphasis on the human embryo. Some exceedingly fine colored illustrations enhance the value of this section. Special emphasis should be placed on the quality of the chapter dealing with the fetus, which seems to be perhaps the most complete thus far made available in books of this character.

Special emphasis is placed on the endocrinologic tests in the diagnosis of pregnancy. The advice on prenatal care is complete with statements relative to diet and actual outlines of suitable diets, and also with a good consideration of the newer knowledge of vitamins as applied to the diet during pregnancy.

The multiplicity of illustrations associated with the chapter on the conduct of labor makes it most useful for the general practitioner who needs first hand consultation in problems of this character. The discussion of the toxemia of pregnancy and of eclampsia is an adequate literary review of the available knowledge. There is an excellent index to this volume.

Volume II concerns the pathology of labor and of the puerperium, operative obstetrics, infections and tumors of the female tissues. The numerous contributors represent various sections of the country. Especially noteworthy is a history of American gynecology by Dr. Howard Kelly. Dr. Curtis himself contributes several chapters on the infections. Most of the chapters on operative obstetrics are by Dr. William C. Danforth, Herbert M. Little and Norris W. Vaux. Cesarean section is considered by Dr. H. J. Stander.

The second volume, like the first, is replete with illustrations especially made or selected for this work. Like all systems of knowledge in the medical field written by various authors, this one is marked by some inequalities. On the whole, however, the volumes bear evidence of careful selection, of careful editing, and of exceeding care on the part of the publisher.

**Sammlung psychiatrischer und neurologischer Einzeldarstellungen.** Herausgegeben von Prof. Dr. A. Bostroem und Prof. Dr. J. Lange. Band IV: Das persönliche Tempo: Eine erbbiologische Untersuchung. Von Dr. Ida Frischeisen-Köhler. Paper. Price, 5.50 marks. Pp. 63, with 10 illustrations. Leipzig: Georg Thieme, 1933.

The psychologist William Stern in 1900 made the suggestion that the speed at which an individual prefers to receive sensory impressions (for example, a musical melody) as well as the speed at which he engages most comfortably in activity are influenced to a considerable degree by a more or less constant "personal tempo" peculiar to each individual. Since then a number of other investigators (cited by Dr. Frischeisen-Kohler) have found evidence seeming to confirm this suggestion. In the investigation under discussion, Dr. Frischeisen-Kohler undertakes to determine the part played by heredity in the determination of this "personal tempo." The tests chosen for the investigation are (*a*) tapping experiments: (1) tapping with the finger on the table in whatever position the subject may choose, (2) tapping on the edge of the table with outstretched index finger and (3) tapping with the foot on the floor. In each of these tests the subject is asked to choose the speed of tapping that is most agreeable to him. (*b*) In a second group of tests the subject is asked to choose the rate of beating of a metronome (4) that is most agreeable to him or (5) that seems to the subject "neither slow nor fast." Dr. Frischeisen-Kohler finds that there is a high degree of constancy in the "tempo" of the same individual on different days in tests within the same group (i. e., either the group of tapping tests or the group of metronome tests). The tempo chosen for the metronome tends to be slightly slower than that for the tapping tests but does not show any marked divergence. On the other hand there are marked differences in tempo between different individuals in all the tests and these are much in excess of the differences in tempo of the same individual in different tests or at different times. The influence of age and of sex on the average "tempo" is found to be slight and not statistically assured. The influence of heredity on the personal tempo is investigated by a statistical comparison of the differences in tempo between enzygotic twins, with the corresponding differences between (1) fraternal twins, (2) brothers and sisters and (3) nonrelated individuals. Dr. Frischeisen-Kohler finds that the differences between enzygotic twins are not greater than the corresponding variations in tempo of one and the same individual. The differences in tempo between fraternal twins and between brothers and sisters are considerably greater than those between enzygotic twins but are much less than the average differences between the unrelated individuals. Hereditary influences, Dr. Frischeisen-

Kohler concludes must therefore play a large part in determining the "personal tempo." She is uncertain as to the laws according to which personal tempo may be inherited but suggests the possibility either of mendelian inheritance of two or more genes, with dominance of the more rapid tempo, or of inheritance of one gene without dominance.

**Correction of Defective Speech: A Complete Manual of Psycho-Physiological Technique for the Treatment and Correction of the Defects of Speech.** By Edwin Burket Twitmyer, Ph.D., Professor of Psychology and Chief of Corrective Speech Clinic, University of Pennsylvania, and Yale Samuel Nathanson, Ph.D., Instructor in Psychology and Assistant, Corrective Speech Clinic, University of Pennsylvania. Cloth. Price, $3.50. Pp. 413, with illustrations. Philadelphia: P. Blakiston's Son & Company, Inc., 1932.

This volume is presented by the authors as a complete manual of psychophysiologic technic for the correction of the defects of speech. No attempt is made to apply the technic presented to the especial requirements of the many specific problems of voice and speech disorder. The book constitutes, as it stands, a manual applicable only to simple articulative problems. The book is written by professional psychologists, who have taken over educational therapeutic work in disorders of speech. The peripheral physiology of voice and speech production naturally constitutes the basis for the understanding of voice and speech psychology; and educational treatment of disorders of speech in their different aspects demands particularly a thorough psychophysiologic knowledge of voice and speech production. To a medical audience this book is worth mentioning chiefly as an example of an unfortunate situation existing in the still youthful field of disorders of speech; namely, that the professional psychologist who enters the field too often fails to master the complex psychophysiology of the production of voice and speech. Not only are physiologic facts presented obscurely and even wrongly in this volume, but the entire arrangement of the book seems to be based on the confusing conception that physiologic knowledge isn't of real importance anyway. The chapter devoted to habit modification is valuable, as are other less significant practical ideas, but the book fails physiologically to meet the requirements of a basic manual in the field of disorders of speech.

**Introduction à l'étude de la chiroscopie médicale.** Par Henri Mangin-Balthazard. Préface du Docteur Fortier-Bernoville. Paper. Price, 25 francs. Pp. 269, with 45 illustrations. Paris: La Renaissance Moderne, 1932.

This book attempts to classify the various shaped hands and to work out a system of diagnosis for all diseases from the shapes of the fingers and hands and the lines of the palm. The line of reasoning, if it can be so dignified, is as follows: The author analyzes a hand as one in which there is a strong probability that the possessor will contract syphilis. He then states that the person has locomotor ataxia. This is the whole proof. Palmistry cannot be granted the dignity of medical recognition without presentation in more convincing manner than this. The book has no value from a medical standpoint.

**A Synopsis of Surgery.** By Ernest W. Hey Groves, M.S., M.D., B.Sc., Consulting Surgeon to the Bristol General Hospital. Tenth edition. Cloth. Price, $5. Pp. 693, with illustrations. Baltimore: William Wood & Company, 1933.

This is a standard work. The qualifications and war record of the author are excellent. He has devised many ingenious operations. The volume is an epitome of the salient facts in surgical practice. These are presented in such a manner that they can be easily and quickly referred to. The special arrangement of headings, type and indented margins enables the reader to see the scope of the subject at a glance and to refer to any part of it readily. Only the main points of operations are referred to, so that the principles which underlie each procedure are not lost in a mass of details. Anatomic and pathologic facts are inserted only when they are essential to a comprehension of clinical signs and operative measures. A summary of the important surface markings is given in the last chapter. In the main arrangement of the book and in the sequence of the chapters, the author follows Rose and Carless's large book on surgery. This is the best synopsis of surgery on the medical book shelves. It has all the qualities of an excellent review of general surgery: directness, frankness, full exposition and little padding.

**Ergebnisse der gesamten Tuberkuloseforschung.** Herausgegeben von H. Assmann, H. Beitzke, H. Braeuning und St. Engel. Band V. Paper. Price, 43 marks. Pp. 427, with 128 illustrations. Leipzig: Georg Thieme, 1933.

Following the plan of the first four volumes of Assmann's "Results of Aggregate Tuberculosis Inquiries," this volume includes six important monographs. In the first monograph, covering the subjects of the development, organization and problems of combating rural tuberculosis, Dr. Friedrich Koester of Westphalia, in fifty-two pages of valuable information, includes practically all the phases of the organization and management of rural tuberculosis control and its limitation in Germany. Costs, tuberculin testing, nursing problems, sputum examinations and roentgen diagnosis are all considered, as well as sanitary and hygienic measures. The importance of transportable x-ray facilities is emphasized. The value of lay cooperation is stressed. The working province is based on political divisions, and cooperative efforts have been found particularly valuable in handling this difficult problem. Those interested in tuberculosis control will find this portion of the book interesting and valuable.

The second monograph (65 pages), on the hilus of the child, by Dr. Stefan Engel of Dortmund, is well illustrated with reproductions of photographs, drawings and roentgenograms aimed to elucidate the hilar region normally and in disease. The chapters on nonspecific hilitis and the condition in chronic residual bronchial catarrhs are valuable for students of the chest. In addition, the summation of hilar shadows is elucidated in a valuable way, followed by a clear definition of the hilus in primary tuberculosis. Especially worth while in all these monographs are the author's summarized conclusions. Engel points out that our views on specific and nonspecific hilitis shadows based on anatomic considerations have suffered decided revision and except in the few massively involved cases of tuberculous bronchial glands definite conclusions are not warranted.

The third monograph (73 pages), on "Views of Serology of Tuberculosis" by Drs. Ernst Witebsky and Rudolf Klingenstein of Heidelberg, considers a most difficult subject because of the many phases involved which have proved controversial regarding, especially, practical diagnosis and prognosis. In the light of our present knowledge of specific and nonspecific blood changes in tuberculosis and recent chemical studies the presentation is well adapted for the student's as well as the specialist's use. An extensive bibliography under various divisions of the subject at the end is a valuable adjunct. Students might not all agree with the conclusions drawn, but personal observations and the literature cited warrant the stand taken at present. Dogmatism is avoided and the burden of final proof left for the future to reconcile clinical and serologic-clinical analyses. All in all, it is a masterly presentation of the subject.

The fourth monograph (29 pages), on the "Infectiousness of Childhood Tuberculosis: Bacterial Excretion in Favorable and Imperceptible Intrathoracic Processes," by Dr. Hans Opitz of Mainz, considers bacillary excretion in "manifest open" and "closed" cases and further gives a valuable age classification. His stand on the infectiousness of the cases is one to which all bacteriologists will contribute and which is in line with modern reasoning that so long as we cannot trace the source of infections in more than half of the cases it is well to be suspicious of all, even slight cases, especially since young children require only short exposure for infection.

In the fifth monograph (117 pages), on the "Pathologic Anatomy of the Hematogenous Disseminated Tuberculosis," by Dr. Walter Pagel of Heidelberg, are considered bacteremias, the acute and so-called atypical forms of tuberculosis generalization, chronic hematogenous spread, and hematogenous isolated phthisis. Whether one agrees with the Ranke conceptions or not, one must recognize an excellent contribution by Pagel in the field of his greatest interest as judged from his voluminous contributions on this subject. The least one can say of this monograph is that the student of medicine will obtain a good conception of Ranke's and Pagel's views from the excellent presentation of the subject by an authority qualified to present this phase of tuberculosis and in an enlightening fashion.

The final sixth monograph (61 pages), on "The Fate of Tuberculous Infected School Children," by Dr. Karl Mattison of Malmö, Sweden, concludes the well worth while fifth volume of the Assmann set on tuberculosis. After reviewing the

various eras of incidence observations, the author presents his personal studies and plans of procedure. Many of his conclusions, such as the rarity of fetal infection and the high mortality of the first year, diminishing with age, are universally accepted. He calls attention to the increased hazard with increased stress periods.

In general this volume can hardly be considered suited to the wants of the youth in medicine, but it is suited to the needs of the profound student regardless of his specialistic leanings who is interested particularly in the subjects presented in these six monographs or who wishes to complete his set by addition to the previous four volumes. It is the finished art of experts in various fields of tuberculosis.

**Modern Aspects of Gastro-Enterology.** By M. A. Arafa, M.R.C.P., Medical Assistant to Guy's Hospital, London. With foreword by Arthur F. Hurst, M.D., F.R.C.P., Senior Physician, Guy's Hospital, London. Cloth. Price, $8.25. Pp. 374, with 79 illustrations. Baltimore: William Wood & Company, 1933.

The author spent three years in the gastro-intestinal clinics of Europe; the book represents the information he gathered on abdominal disorders. He has presented his observations in an orderly and complete manner. As he states, the book is intended to be a companion to the more complete works on gastro-enterology. The illustrations are excellent, especially those in color showing the view obtained through a sigmoidoscope. The laboratory and x-ray phases are concise and well presented. This book should serve well as a textbook for the student and general practitioner.

**Die Bluttransfusion in Theorie und Praxis.** Von Dr. med. Hans Wildegans, a. o. Professor für Chirurgie an der Universität Berlin. Paper. Price, 9.60 marks. Pp. 157, with 36 illustrations. Berlin: Julius Springer, 1933.

There has been a recent reaction among some members of the medical profession regarding blood transfusions. The practice of giving blood transfusions without specific indication or without due consideration of the possible contraindications has led to many unpleasant sequelae. The author of this monograph has made available for the profession an unusually complete source of information on this subject. The treatise considers the history of blood transfusions, the selection of the donor, the technic and the practical application of blood grouping and typing. In his discussion he not only outlines a standard procedure for the selection of the donor but also emphasizes the practical points that cannot be formulated into absolute rules. He next discusses the fate and physiologic effect of transfused blood and points out the specific action of plasma and corpuscles. The chapter on the technic of transfusion is unusually complete. Many methods for giving whole and citrated blood are discussed and the advantage of each is carefully evaluated. The final chapter is devoted to a consideration of indications and contraindications of transfusion and a summary of the entire subject. The monograph is a timely contribution to clinical medicine and covers in a scholarly manner a subject of great practical value. It is highly recommended to those who have occasion to recommend or give blood transfusion in the practice of medicine.

**Surgical Pathology.** By William Boyd, M.D., M.R.C.P., F.R.C.P., Professor of Pathology, University of Manitoba. Third edition. Cloth. Price, $10. Pp. 866, with 490 illustrations. Philadelphia & London: W. B. Saunders Company, 1933.

The book gives a fairly comprehensive review of the facts and theories concerned with the etiology and pathologic basis of most of the conditions that confront a surgeon in his practice. The treatment of the subject considered is in the main orthodox and authoritative. Some of the views presented are rather radical, especially the discussion on goiter. "The more one studies the problem of goiter, the more is one convinced of the mistake of separating toxic adenoma from exophthalmic goiter. Both should be included under the heading of Graves' disease" (p. 200). Finally, the conclusion is reached that "the prevalent practice of removing a large portion of the struggling gland is hardly likely in the end to prove the best method of treatment." The surgeon will find considerable difficulty in evaluating the author's suggestions for treatment. Further, no mention is made in the paragraph on changes in other organs (p. 215) of the well known effect of exophthalmic goiter on the liver. Several minor matters might be more carefully stated. A fistula is defined as a "passage connecting a skin with a mucous surface" (p. 44). Lymph nodes are continually mentioned as "glands." In discussing carcinoma, the old fashioned term "colloid degeneration" is used in referring to collections of mucus. Evidently the mucous nature of these collections is not recognized. Without any particular evidence the author states (p. 149) that the stroma in epidermoid carcinomas "is due to the irritation produced by the epithelial masses." The word "protoplasm" is used in place of cell cytoplasm. No support is offered for the statement (p. 238) that "on the magenstrasse no mucin is produced." In the discussion of ulcers of the stomach and duodenum the author groups these under the one heading of peptic ulcer and gives the impression that they are clinically and pathologically the same lesion, irrespective of their situation. On page 236 it is stated that "if the field of investigation is widened and all chronic ulcers are taken into consideration, it will be found that peptic ulcer is commoner in the stomach than in the duodenum." This is probably not correct. On page 366 it is stated that "the peritoneum consists of a layer of flattened epithelial cells." Certainly further questions can be raised as to the exact nature of these cells. With reference to metastatic carcinoma, the author states (p. 446) that "the prostate resembles the breast, the thyroid, and the adrenal." He probably means the kidney. The statement (p. 664), that "an extract of this part [anterior lobe] of the pituitary is absolutely without any physiological effect" seems to be rather too sweeping. In considering tumors of the hypophyseal duct under the heading of Rathke pouch tumors, the author does not mention the occurrence of adamantinoma, so common in this region. There is still some awkwardness in the wording of the discussion concerning blood grouping (p. 834). The lack of emphasis in the previous editions on the importance of fat embolism has been corrected in the present volume. Also, the author has omitted the rather invidious comparison between "living" and "deadhouse" pathology. The author's illuminating style of expression and his avoidance of stereotyped descriptions make an interesting and easily readable volume. The illustrations are uniformly well chosen and excellently reproduced.

**Über das Verhalten von Stechmücken besonders von Anopheles maculipennis bei verschiedenen Temperaturen und Luftfeuchtigkeiten.** Von E. Martini und E. Teubner. Beiheft 1 zum Archiv für Schiffs- und Tropenhygiene, Pathologie und Therapie exotischer Krankheiten, Band XXXVII. Gegründet von C. Mense. Paper. Price, 6 marks. Pp. 80, with 10 illustrations. Leipzig: Johann Ambrosius Barth, 1933.

Experiments with Culex pipiens, Theobaldia annulata, Aedes aegypti and Anopheles maculipennis were conducted to determine the effects of combinations of various temperatures and humidities on their length of life, their biting habits, their hibernation activities and the finding of places of shelter. The morphologic and bionomic differences between the varieties messeae and atroparvus of Anopheles maculipennis are recapitulated and discussed in connection with their malaria-carrying ability. It is shown that the distributions of these two varieties between houses and stables may be exactly opposite in different climates or may differ markedly in different regions, owing to differences in the prevalence of construction of dwellings and stables. The influences, favorable and unfavorable, of temperatures and humidities on the longevity or mortality of various species and races of mosquitoes are shown to be the chief determining factors in their different distributions. The authors attack the problem of anophelism without malaria in a new manner.

**Surgical Operations: A Textbook for Students and Nurses.** By E. W. Hey Groves, M.D., B.Sc., M.S., Consulting Surgeon, Bristol General Hospital. Third edition. Cloth. Price, $4.50. Pp. 263, with illustrations. New York & London: Oxford University Press, 1933.

This book has been written for nurses during their training and for later reference. It includes the indications and descriptions of all common operations. General technic is taken up, and the various operating room essentials are discussed. An elaborate section includes pictures of most instruments needed in the operating room. Various regions of the body are described in a systematic manner and the classic operations are clearly and briefly described. The conciseness of the text, together with the careful selection of the essential details, is possible only through the wide experience of the writer, who should be congratulated on the result of his efforts.

## Medicolegal

**Workmen's Compensation Acts: Compensability of Typhoid Fever.**—The claimant's husband, employed by a drug company, died from typhoid fever contracted during an outbreak in Ogden, Utah. She sought compensation under the workmen's compensation act, claiming that he contracted the disease in the course of his employment. Two physicians who investigated the outbreak testified before the industrial commission, on behalf of the claimant, that in their opinion a certain typhoid carrier, and not the city water supply, caused it. Since that carrier often went into the drug store in which the decedent was employed, these witnesses believed that the decedent contracted typhoid fever from him. The employer introduced in evidence a report of the state board of health, purporting to show that the outbreak was due, not to a typhoid carrier, but to a contaminated city water supply. The industrial commission held that the decedent contracted typhoid fever from drinking water, and because he drank the same water at home and at his place of employment, it denied compensation. The claimant appealed to the Supreme Court of Utah. Findings made by the industrial commission on conflicting evidence, said the Supreme Court, are binding on the court. Consequently, under the evidence presented, the court could not disturb the commission's findings. Even if it were shown that the decedent had contracted typhoid fever in the course of his employment, the court doubted whether the claimant would be entitled to compensation. The Utah workmen's compensation act provides compensation only for "personal injury by accident," arising out of and in the course of employment. It provides that the words "personal injury by accident" shall not include a disease, except as it results from an injury. This language, said the court, would seem to indicate a legislative intent that a disease, to be compensable, must be brought about by some injury other than the mere conveying of disease germs to the employee. The finding of the commission denying compensation to the claimant was affirmed.—*Chase v. Industrial Commission (Utah), 17 P. (2d) 205.*

**Workmen's Compensation Acts: Industrial Commission Not Authorized to Award Medical Fees in Excess of Statutory Limits.**—The Georgia workmen's compensation act (Michie's Code, 1926, Sec. 3154 (27)) provides that an employer's liability for medical, surgical and hospital services for a workman injured in an industrial accident shall not exceed $100. The industrial commission of Georgia in making an award included $100 to be applied toward medical expenses. This amount the injured workman paid to the hospital. Later a physician, who apparently attended the injured workman at the instance of his employer, sent the employer a bill for $100, which he refused to pay. The industrial commission then awarded $100, payable to the physician. The employer's insurer appealed to the court of appeals of Georgia, division No. 2. The industrial commission, said the court, has no authority to require an employer to pay a physician for his services in attending an injured employee in excess of $100, in the absence of an agreement to become liable for a greater amount. It may be, however, said the court, that the physician has a remedy at law against an employer who requests him to attend an injured employee and then refuses to pay him. The judgment of the court below affirming the award of the industrial commission was reversed.—*Lloyds Casualty Co. v. Eubanks (Ga.), 167 S. E. 552.*

**Malpractice: Plaintiff May Show that Defendant Is Insured.**—The defendant osteopath treated Bellheimer for hemorrhoids, by the "infiltration method." After nineteen days' treatment, Bellheimer began bleeding from the rectum. He bled for four days. Then he was so weakened that he fainted. The defendant was told of his patient's condition, but he did not respond, and a physician was summoned. Bellheimer died from the loss of blood. The plaintiff, as administratrix of his estate, sued the osteopath, charging him with negligence in that he failed to use osteopathic methods and failed to respond to the call when his patient was bleeding. Judgment was given in favor of the plaintiff, and the defendant appealed to the Supreme Court of Nebraska.

The defendant-osteopath complained that when a jury was being selected the plaintiff examined prospective jurors as to their connection, if any, with the insurance company by which the defendant was indemnified against loss through malpractice claims. He complained, too, that he was cross-examined by the plaintiff as to his indemnity insurance. The Supreme Court concluded that this disclosure of the defendant's insurance was not improper, citing *Nichols* v. *Owens Motor Company*, 121 Neb. 105, 236 N. W. 169. Moreover, the fact that the defendant disclosed the identity of his insurer in the trial judge's chambers, prior to the impaneling of the jury, did not so negative the possibility of prospective jurors being disqualified as to foreclose further inquiry into the matter, nor did it deprive the plaintiff of her right to cross-examine witnesses as to their credibility.

Evidence was given in the course of the trial, including the testimony of the defendant himself, that the treatment of hemorrhoids under the principles of osteopathy was identical with their treatment under the principles of nonsectarian medicine. The trial court therefore properly received the testimony of nonsectarian practitioners with respect to the matter. The judgment in favor of the plaintiff was affirmed.—*Bellheimer v. Kerucha (Neb.), 246 N. W. 867.*

## Society Proceedings

### COMING MEETINGS

Academy of Physical Medicine, Chicago, Sept. 13-14. Dr. Arthur H. Ring, 163 Hillside Avenue, Arlington, Mass., Secretary.

American Academy of Ophthalmology and Otolaryngology, Boston, September 18-22. Dr. William P. Wherry, 1500 Medical Arts Building, Omaha, Executive Secretary.

American Association of Obstetricians, Gynecologists and Abdominal Surgeons, Lucerne-in-Quebec, Canada, September 11-14. Dr. Magnus A. Tate, 19 West Seventh Street, Cincinnati, Secretary.

American College of Surgeons, Chicago, October 9-13. Dr. Franklin H. Martin, 40 East Erie Street, Chicago, Director-General.

American Congress of Physical Therapy, Chicago, September 11-15. Dr. F. B. Balmer, 35 East Wacker Drive, Chicago, Secretary.

American Public Health Association, Indianapolis, October 9-12. Dr. Kendall Emerson, 450 Seventh Avenue, New York, Acting Executive Secretary.

American Roentgen Ray Society, Chicago, September 25-30. Dr. Eugene P. Pendergrass, 3400 Spruce Street, Philadelphia, Secretary.

Associated Anesthetists of the United States and Canada, Chicago, October 8-12. Dr. F. H. McMechan, 318 Hotel Westlake, Rocky River, Ohio, Secretary.

Association of American Medical Colleges, Minneapolis, Oct. 30-Nov. 1. Dr. Fred C. Zapffe, 5 South Wabash Avenue, Chicago, Secretary.

Association of Military Surgeons of the United States, Chicago, September 25-27. Dr. J. R. Kean, Army Medical Museum, Washington, D. C., Secretary.

Colorado State Medical Society, Colorado Springs, September 14-16. Mr. Harvey T. Sethman, 537 Republic Building, Denver, Executive Secretary.

Delaware, Medical Society of, Wilmington, September 26-27. Dr. W. O. La Motte, 604 Medical Arts Building, Wilmington, Secretary.

Idaho State Medical Association, Twin Falls, September 18-19. Dr. Harold W. Stone, 105 North Eighth Street, Boise, Secretary.

Indiana State Medical Association, French Lick, September 25-27. Mr. T. A. Hendricks, 23 East Ohio Street, Indianapolis, Executive Secretary.

Inter-State Postgraduate Medical Association of North America, Cleveland, Oct. 16-20. Dr. W. B. Peck, 12½ East Stephenson Street, Freeport, Ill., Managing Director.

Kansas City Southwest Clinical Society, Kansas City, Mo., October 3-5. Dr. Lewis G. Allen, 601 Minnesota Avenue, Kansas City, Kan., Secretary.

Kentucky State Medical Association, Murray, September 11-14. Dr. A. T. McCormack, 532 West Main Street, Louisville, Secretary.

Michigan State Medical Society, Grand Rapids, September 12-14. Dr. F. C. Warnshuis, 148 Monroe Avenue, Grand Rapids, Secretary.

Mississippi Valley Conference on Tuberculosis, Kansas City, Mo., October 6. Dr. E. A. Meyerding, 11 West Summit Avenue, St. Paul, Secretary.

Nevada State Medical Association, Las Vegas, September 29-30. Dr. Horace J. Brown, 120 North Virginia Street, Reno, Secretary.

New England Surgical Society, Boston, September 29-30. Dr. J. M. Birnie, 14 Chestnut Street, Springfield, Mass., Secretary.

Northern Minnesota Medical Association, Willmar, September 8-10. Dr. O. O. Larsen, Detroit Lakes, Secretary.

Oregon State Medical Society, Portland, Oct. 26-28. Dr. Albert W. Holman, 364 Washington Street, Portland, Secretary.

Pennsylvania, Medical Society of the State of, Philadelphia, October 2-5. Dr. Walter F. Donaldson, 500 Penn Avenue, Pittsburgh, Secretary.

Southern Minnesota Medical Association, New Ulm, September 25. Dr. M. C. Piper, Mayo Clinic, Rochester, Secretary.

Utah State Medical Association, Salt Lake City, September 14-16. Dr. L. R. Cowan, 305 Medical Arts Building, Salt Lake City, Secretary.

Vermont State Medical Society, Barre, October 5-6. Dr. W. G. Ricker, 31 Main Street, St. Johnsbury, Secretary.

Virginia, Medical Society of, Lynchburg, Oct. 24-26. Miss Agnes V. Edwards, 1200 East Clay Street, Richmond, Secretary.

# Current Medical Literature

## AMERICAN

The Association library lends periodicals to Fellows of the Association and to individual subscribers to THE JOURNAL in continental United States and Canada for a period of three days. Periodicals are available from 1925 to date. Requests for issues of earlier date cannot be filled. Requests should be accompanied by stamps to cover postage (6 cents if one and 12 cents if two periodicals are requested). Periodicals published by the American Medical Association are not available for lending but may be supplied on purchase order. Reprints as a rule are the property of authors and can be obtained for permanent possession only from them.

Titles marked with an asterisk (*) are abstracted below.

### American Journal of Cancer, New York

**17:** 873-1136 (April) 1933

Absorption of Protective Agent from Rats Resistant to Transplantable Sarcoma. W. H. Woglom, New York.—p. 873.

Genetic Factors in Relation to Etiology of Malignant Tumors. M. R. Curtis, W. F. Dunning and F. D. Bullock, New York.—p. 894.

Potassium Content of Benign Uterine Tumors. L. C. Scott, New Orleans.—p. 924.

Some Observations of Effects of Radium Irradiation on Tissue Cultures. W. G. Whitman, Baltimore.—p. 932.

Familial Multilocular Cystic Disease of Jaws. W. A. Jones, Kingston, Ont., Canada.—p. 946.

Treatment of Carcinoma of Cervix in Detroit, Michigan. H. C. Saltzstein and A. A. Topcik, Detroit.—p. 951.

**18:** 1-268 (May) 1933

*Excision of Rectum for Cancer. J. P. Lockhart-Mummery, London, England.—p. 1.

Radiosensitiveness of Tumors Derived from Cartilage. A. U. Desjardins, Rochester, Minn.—p. 15.

Feeding Solution for Cultures of Human Fibroblasts. J. P. M. Vogelaar and Eleanor Erlichman, New York.—p. 28.

Carcinoma of Rectum Associated with Fistulas in Ano: Case. J. Lynch and P. Gross, Cleveland.—p. 39.

Exhibit of Important Books, Papers and Memorabilia Illustrating Evolution of Knowledge of Cancer: For the Graduate Fortnight on Tumors at the New York Academy of Medicine, Oct. 17 to 28, 1932. C. D. Haagensen, New York.—p. 42.

**Excision of Rectum for Cancer.**—Lockhart-Mummery describes an operation for cancer in which the growth is at the anus or in the rectum proper and not fixed to important structures. He uses a low spinal anesthesia. Chloroform and ether are contraindicated. Although the operation can be performed in one stage, it is advisable to do the colostomy a week or two before the actual excision. If the patient is a man, a self-retaining catheter is passed into the bladder, the patient is turned over on the side, and the anus is stitched up with a curved needle and stout silk thread. The incision is made from a little above and behind the base of the coccyx forward toward the perineum and surrounding the anus to about 2 inches in front of the anus. The incision is deepened posteriorly, the base of the coccyx exposed and the coccyx disarticulated with the knife, or the bone divided with a chisel; the deep fascia is divided transversely, the middle sacral artery or its branches are cut and the bleeding is controlled. The first finger of the left hand is passed beneath the fascia and pushed forward under the left levator ani muscle and between it and the rectum. The structures between the finger and the skin are divided and the bleeding points checked. This procedure is repeated on the opposite side. The wound in front of the rectum is deepened to just behind the bulb of the urethra, or behind the vagina, until the catheter in the urethra can be felt. The separation is continued and one keeps quite close to the posterior wall of the urethra until the capsule of the prostate is reached, when the rectum can be stripped off with the finger quite easily until the two seminal vesicles are exposed; in women the rectum is stripped off the posterior vaginal wall. It is important to keep posterior to the vesicles, or the bladder will be damaged. The fascial attachments holding the rectum on each side and posteriorly are divided, the rectum is pulled backward away from the bladder, and the peritoneal cavity is opened just in front of the rectum. A large gauze pack with a tape is pushed into the peritoneal cavity to prevent the entrance of blood. The peritoneum is divided toward the back, along each side of the rectum and close to it. The rectum is drawn forward and the mesorectum divided as high up and as far back as possible. Large swabs soaked in antiseptic solution are placed above and below the intestine at a point above the point of division. The peritoneal and muscular coats of the colon are divided, only the mucous membrane being left undivided. The muscular coat is carefully stripped back for one-fourth inch, the intestine is divided between two clamps with a cautery, and the stump is ligatured with stout catgut. A purse string suture is used to close the inverted end of the colon. The cloths and pack are removed from the peritoneal cavity and the peritoneal floor is closed by two catgut sutures starting at the opposite ends of the gap and tied together in the middle line. In inserting this suture, care must be taken to leave the turned-in end of the colon in the wound and not in the peritoneal cavity. Separate mattress stitches of fish gut, loosely tied, are best for the skin sutures, and a cigaret drain of rubber tissue is inserted in the middle of the wound. The mortality of this operation among the author's 330 patients was only 7 per cent, and this includes patients up to the age of 78. In 167 cases from his private practice there were only 6 deaths, a mortality of less than 4 per cent.

### American Journal of Ophthalmology, St. Louis

**16:** 385-480 (May) 1933

Accidents and Complications Occurring in Intracapsular Extraction of Senile Cataracts. I. Barraquer, Barcelona, Spain.—p. 385.

Epidemic Superficial Keratitis. S. Sanyal, Calcutta, India.—p. 390.

Size of Pupil as Possible Index of Ocular Fatigue. M. Luckiesh and F. K. Moss, Cleveland.—p. 393.

Additional Experiments Verifying Presence of Treponema Pallidum in Cornea in Experimental Interstitial Keratitis. C. A. Clapp, Baltimore.—p. 397.

International Visual Standards for Aviators. C. Berens, New York.—p. 403.

*Ocular Complications in Case of Agranulocytic Angina, Bilateral Ring Abscess with Total Visual Loss. H. Barkan, San Francisco.—p. 406.

Inoculation of Human Conjunctiva with Trachomatous Materials. P. Thygeson, Iowa City.—p. 409.

Vision for Equilibrium and Orientation. E. Jackson, Denver.—p. 412.

Scotometry of Retinal Edema. J. N. Evans, Brooklyn.—p. 417.

Eyes of Some Famous Historical Characters: Little Journeys in Ophthalmology—I. C. A. Bahn, New Orleans.—p. 425.

**Agranulocytic Angina.**—Barkan reports a case of agranulocytic angina with ocular complications in a woman, aged 73. She had had swollen and sore eyes one and two years previous to her admission. Three weeks before admission, the patient developed an acute nasal discharge, sore throat, cough and fever. A week later the left eye became sore, red and swollen, followed by the right eye, so that on admission she could not open either eye. Following treatment with pentnucleotides intravenously, the patient was better. The ophthalmic changes increased in severity, leading finally to complete blindness. The patient recovered from her agranulocytic angina.

### American Journal of Physiology, Baltimore

**104:** 259-518 (May 1) 1933. Partial Index

Studies on Pain Sensibility of Arteries: I. Some Observations on Pain Sensibility of Arteries. R. M. Moore and Ruth E. Moore, Galveston, Texas.—p. 259.

Id.: II. Peripheral Paths of Afferent Neurons from Arteries of Extremities and of Abdominal Viscera. R. M. Moore and A. O. Singleton, Jr., Galveston, Texas.—p. 267.

Effects of Adrenal Medulla and Thyroid on Respiratory Metabolism of Pancreatic Diabetes. G. C. Ring and C. W. Hampel, Boston.—p. 298.

Studies on Physiology of Sleep: VII. Effect of Position of Body and of Sleep on Rectal Temperature in Man. N. Kleitman and A. Doktorsky, Chicago.—p. 340.

Effect of Intravenous Administration of Lecithin and Sodium Chloride on Blood Sugar Values. D. E. Gregg, Cleveland.—p. 344.

Observations on Blood of Normal Human Subjects During Fetal Liver Feeding. O. S. Walters and P. H. Woodard, Lawrence, Kan.—p. 364.

Effects of Adrenalectomy and Cortico-Adrenal Extract on Renal Excretion and Tissue Fluids. H. Silvette and S. W. Britton, Charlottesville, Va.—p. 399.

Comparison of Clearances of Various Urinary Constituents. H. L. White and Betty Monaghan, St. Louis.—p. 412.

Action of Acetylcholine on Intestine. F. Bernheim, Durham, N. C.—p. 433.

Simultaneous Study of Constituents of Sweat, Urine and Blood; Also Gastric Acidity and Other Manifestations Resulting from Sweating: X. Basic Metals. G. A. Talbert, C. Haugen, R. Carpenter and J. E. Bryant, Grand Forks, N. D.—p. 441.

Studies on Physiology of Sleep: VIII. Diurnal Variation in Performance. N. Kleitman, Chicago.—p. 449.

Respiratory Death from Central Vagus Stimulation After Removal of Stellate Ganglions. S. P. Cromer and A. C. Ivy, Chicago.—p. 457.

Existence of Afferent Respiratory Impulses Mediated by Stellate Ganglions. S. P. Cromer, R. H. Young and A. C. Ivy, Chicago.—p. 468.

Osmotic Relations Between Blood and Body Fluids: IV. Pancreatic Juice, Bile and Lymph. A. Gilman and G. R. Cowgill, New Haven, Conn.—p. 476.

## American Journal of Surgery, New York

**20:** 201-514 (May) 1933

Presidential Address: Surgery and Its Relation to Society. R. S. Cathcart, Charleston, S. C.—p. 204.
Ureteral Calculi. G. R. Livermore, Memphis, Tenn.—p. 214.
Ideal Operation for Undescended Testis and Necessity for Operation. E. D. Newell, Chattanooga, Tenn.—p. 223.
Endocrine Influence in Production of Prostatic Hypertrophy: Method for, Its Control. W. E. Lower, Cleveland.—p. 230.
*Cystectomy for Carcinoma of Bladder: Report of Cases. R. C. Coffey, Portland, Ore.—p. 254.
Tumors of Parathyroid Gland: Report of Two Cases. F. W. Rankin, Lexington, Ky., and J. T. Priestley, Rochester, Minn.—p. 298.
Peripheral Nerve Symptoms in Goiter. A. McGlannan, Baltimore.—p. 315.
Congenital Stenosis of Cardia: Report of Case in Two-Day-Old Infant. J. K. Simpson, Jacksonville, Fla.—p. 319.
Diverticulosis of Duodenum: Report of Case in Fourth Portion of Duodenum. F. L. Barnes, Houston, Texas.—p. 328.
Remarks on Intestinal Anastomosis, with Description of Simple Aseptic Technic. W. D. Gatch, Indianapolis.—p. 341.
*Precolostomy for Inoperable Carcinoma of Rectum and Lower Sigmoid. H. B. Stone, Baltimore.—p. 355.
*Method of Treating Irreducible Prolapse of Rectum. M. R. Reid, Cincinnati.—p. 359.
Syphilis of Stomach. W. L. Estes, Jr., Bethlehem, Pa.—p. 366.
*Adynamic Ileus. A. Ochsner and I. M. Gage, New Orleans.—p. 378.
End-Results in Treatment of Cancer of Breast by Radical Surgery Combined with Preoperative and Postoperative Irradiation. B. J. Lee, New York.—p. 405.
Cancer Is Curable. F. H. Martin, Chicago.—p. 444.
Extreme Cardiac Decompensation Following Traumatic Arteriovenous Fistula of Left Subclavian Vessels. J. M. Mason, Birmingham, Ala.—p. 451.
Acute Intestinal Obstruction: Fifth Instalment. M. A. McIver, Cooperstown, N. Y.—p. 475.

**Cystectomy for Carcinoma of Bladder.**—Coffey reports eleven cases of cystectomy for cancer of the bladder, three of which resulted in surgical deaths. The essential part of the operation is the transplantation of the ureters into the large intestine. This must be performed by the submucous implantation method. He proposes three principles of technic for its performance. The technics are as follows: In the first technic the ureter is drawn into the interlamellar space immediately outside the intestinal mucosa and its split end is dragged through an opening made in the mucosa at the caudal end of the intestinal incision and anchored inside the intestine, thereby bringing the open ureter into the intestinal lumen at the time of operation. In the second technic a tube or catheter is fastened within the ureter by ligatures which both seal the ureter against intestinal infection and anchor it to the catheter, after which the catheter is passed through an opening made in the mucosa at the caudal end of the intestinal incision and is used to draw the ureter into the interlamellar space immediately outside the intestinal mucosa and through the opening in the mucosa into the intestinal lumen. The urine is transmitted from the upper ureter through the catheter into a receptacle outside the body. The open ureter is exposed to intra-intestinal pressure only after the intra-intestinal end of the ureter sloughs and permits the catheter to come away from eight to sixteen days after operation. In the third technic the ureter is brought into the interlamellar space immediately outside the intestinal mucosa by an anchor stitch, which fastens the end of the ureter in the angle of the caudal end of an uncompleted intestinal incision. The anastomosis is gradually made by a tightly tied suture, which transfixes both the ureter and the intestinal mucosa. The anastomosis is complete from two to four days after operation. The author believes that the second technic is ideal for use in conjunction with cystectomy for cancer of the bladder, because the two ureters are transplanted in one operation. In the male, cystectomy is performed at the same time and the ureters are transplanted with little or no additional risk. Its only objection is that it requires special skill in the performance of intraperitoneal surgery.

**Precolostomy for Inoperable Rectal Carcinoma.**—The procedure to which Stone gives the title of "precolostomy" consists in doing what amounts to an ordinary colostomy with the exception of the final step of actually opening the intestine. He proceeds as follows: With the abdomen still opened by the original exploratory incision, a small left-side McBurney incision is made, from 1½ to 2 inches long. The most convenient point of the intestine is gently drawn up into the McBurney incision until about one fourth of its circumference extends beyond the skin level, and it is fixed by a few stitches to the skin, no other sutures being used. Care must be taken that the incision in the peritoneum is not small enough to pinch the cone of intestine that is drawn through it. The principal exploratory incision is then closed and the wounds are dressed together under one dry dressing. The author believes that the advantages of this procedure are that it avoids the necessity of a second operation for obstruction, should such a condition develop, and that it also avoids the disagreeable features of a colostomy until such time as a colostomy becomes imperative.

**Method of Treating Irreducible Prolapse of Rectum.**—Reid describes an operative procedure for prolapse of the rectum irreducible by ordinary nonoperative methods, in which rubber tubing, about 1 inch in diameter, is inserted into the prolapsed rectum and passed through the sphincters well up into the rectum. With the tube thus placed, the prolapse surrounding it is palpated to make sure that there is no herniation of intestine into a peritoneal pouch. The tube is anchored at the point at which palpation is most satisfactory and convincing by means of a few heavy silk sutures at the apex of the prolapse. Next a constricting rubber band is placed around the prolapse at the normal surface level of the anus and just distal to the external sphincter muscle. This band stops the circulation to the prolapse and also occludes any peritoneal pouch that might be present. The patient is watched for evidences of intestinal obstruction. In the author's patients at the end of two weeks, during which time there was normal defecation and expulsion of gas through the tube, the entire prolapse sloughed away. A spontaneous anastomosis had occurred at the level of the rubber band. Tone quickly returned to the muscles, and at the time of the patients' discharge from the hospital there was good sphincter control and no evidences of rectal stricture. He believes that this procedure lessens the chances of peritonitis which attend surgical amputation of the prolapse and suture in the presence of infection and necrosis.

**Adynamic Ileus.**—Ochsner and Gage state that the most frequent cause of adynamic ileus is exposure to air and manipulation during laparotomy. Adynamic ileus occurs earlier postoperatively than mechanical ileus. It is characterized by the absence of colicky, intermittent pain. Plain roentgenograms of the abdomen are of inestimable value in the diagnosis of all forms of ileus. The treatment of adynamic ileus varies according to the type. The prophylactic treatment consists of abandonment of preoperative and postoperative catharsis and the avoidance of unnecessary trauma and peritoneal contamination during the performance of a laparotomy. Physiologic ileus, which occurs for varying periods of time following all laparotomies, is treated by withholding the oral administration of all substances until nausea has ceased, by the application of heat to the abdomen, and by the administration of morphine. Water balance should be reestablished. Severe adynamic ileus is treated by transduodenal decompression by means of indwelling nasal catheters and remineralization of the patient. Hypertonic salt solutions injected intravenously stimulate the intestinal movement in adynamic ileus. In severe cases, one or more enterostomies are frequently necessary in order to decompress the dilated intestine. A splanchnic block (splanchnic or spinal analgesia) is often efficacious. Drugs are of little or no value.

## American Journal of Tropical Medicine, Baltimore

**13:** 243-340 (May) 1933

Yellow Fever Virus Encephalitis in South American Monkeys. W. Lloyd and H. A. Penna, Bahia, Brazil, South America.—p. 243.
Transmission of Quartan Malaria by Anopheles Quadrimaculatus: Note. M. F. Boyd and W. K. Stratman-Thomas, Tallahassee, Fla.—p. 265.
Animal Susceptibility to Trypanosoma Hippicum, Equine Trypanosome of Panama, with Especial Reference to Cattle as Unharmed Host and Probable Reservoir of Importance. H. C. Clark and L. H. Dunn, Panama, Republic of Panama.—p. 273.
Air Traffic in Relation to Public Health. T. H. D. Griffitts, Jacksonville, Fla.—p. 283.
*Preservation of Yellow Fever Immune Serums. W. Lloyd and H. A. Penna, Bahia, Brazil, South America.—p. 291.
Occurrence of Microfilaria Ozzardi in Panama. O. R. McCoy, Rochester, N. Y.—p. 297.
Survey of Four Hundred and One College Freshmen for Intestinal Protozoa. J. H. Arnett, D. H. Wenrich and R. M. Stabler, Philadelphia.—p. 311.
Amebiasis a Public Health Problem in Cities of the Southern United States. M. S. Dougherty, Jr., Atlanta, Ga.—p. 317.
*Cure of Nutritional Anemia by One of the Legumes: Preliminary Report. D. H. Cook and T. Rivera, San Juan, Puerto Rico.—p. 327.

**Preservation of Yellow Fever Immune Serums.**—Lloyd and Penna state that serum may be conveniently dried in test

tubes or in ampules in from 1 to 10 cc. units. The use of an oversized container for the specimen of serum to be dried permits it to freeze and dry as a thin film on the side of the tube, and it makes easy the hermetic sealing of the tube without heating the contents. The serum is placed in suitable tubes and the butt of each tube is immersed in a dish of chilled 95 per cent alcohol. The tubes are whirled manually in the alcohol until the greater part of the serum thrown by centifugal force on the walls of the tube has frozen in the lower third of the tube in a thin film having the form of an inverted thimble. The tubes of serum are then put into the desiccator and dried by sulphuric acid under high vacuum. The air is exhausted from the desiccator by a high vacuum pump capable of reaching a vacuum of 0.5 mm. of mercury in three and a half minutes. The attained frozen state of the serum is maintained during the drying process by using a desiccator that has been packed in a salt-ice mixture for two hours previous to its use. This allows time for the slow chilling of a layer of glycerin 35 mm. deep, placed in the bottom of the desiccator for contact with the butts of the tubes. The tubes are removed after twenty-four hours and sealed in the flame of a blow torch. At this time the thimbles of pale yellow serum lie loose in the butts. A little shaking converts them into a fine dry powder. The tubes are ordinarily stored at refrigerator temperature. When needed for use, the desiccated serum may be rehydrated by opening the ampule and adding a volume of distilled water equal to that lost in desiccation. The fine powder readily dissolves. The results of titrations (by the method of Sawyer and Lloyd) indicate that preservation of yellow fever immune serum by rapid desiccation in vacuo and in the frozen state causes no titrable reduction in the content of "immune protecting antibody" after storage at refrigerator temperatures for a period of five months.

**Nutritional Anemia.**—Cook and Rivera draw the following conclusions as a result of feeding pigeon peas Cajan cajan (L) Millsp. (from 5 to 10 Gm. daily) to rats on an anemia-producing diet: 1. Gandules or pigeon peas exhibit curative properties in this type of anemia. 2. Fresh peas show greater regeneration than the ash of equivalent quantities, when both are fed at levels suboptimal for normal hemoglobin regeneration. 3. It is suggested that experiments designed to produce less than maximum regeneration may show differences in the efficiency of various foods and perhaps throw light on the question of the part played by inorganic versus organic constituents in hemoglobin formation.

## American Review of Tuberculosis, New York

**27:** 411-528 (May) 1933

Pathologic Anatomy of Pulmonary Tuberculosis in the American Negro and in the White Race. F. R. Everett, Philadelphia.—p. 411.
*Comparative Sensitiveness of the Pirquet and Intracutaneous Tuberculin Tests. J. D. Aronson, Philadelphia; D. Zacks, Brookline, Mass., and J. J. Poutas, Boston.—p. 465.
Tuberculosis and Tuberculous Infection Among Nurses: Study of Nursing Personnel of the University of California Hospital. S. J. Shipman and Elizabeth A. Davis, San Francisco.—p. 474.
Correlation of Blood Counts in One Hundred and Fifty Clinical Cases of Tuberculosis and Underlying Pathologic Changes as Shown by Serial X-Ray Films. J. W. Flinn, Prescott, Ariz.; R. S. Flinn, Phoenix, Ariz., and Z. M. Flinn, Albuquerque, N. M.—p. 488.
*Use of Filtered Air Chambers in Pulmonary Tuberculosis. A. L. Barach, New York.—p. 508.
Sanatorium Treatment of Lupus. L. Alpert, Middleboro, Mass.—p. 515.
Some Aspects of Artificial Pneumothorax Technic: Description of Two Improved Apparatuses. J. W. Cutler, Philadelphia.—p. 522.

**Comparison of Tuberculin Tests.**—Aronson and his associates made a study of the relative sensitiveness of the Pirquet and the intracutaneous tuberculin tests in determining the incidence of tuberculous infection. For this purpose two large groups of white school children near Boston were tested simultaneously by the two methods. Of the children between the ages of 5 to 19 years who failed to react to the Pirquet test, from 1.5 to 3.9 per cent, with an average of 2.9 per cent, reacted to 0.01 mg. of tuberculin. When 1 mg. of tuberculin was employed, the total of those who failed to react to the Pirquet test but reacted to the intracutaneous test ranged from 14.2 to 28.4 per cent, with an average of 19.1 per cent. The total of those who reacted to the intracutaneous test and not to the Pirquet test yielded a negligible increase in the amount of infection detected by this means. Those who failed to react to the Pirquet test, from 17.8 to 30 per cent, with an average of 22 per cent, reacted to the intracutaneous test with tuberculin. Repetition of the Pirquet test yielded a negligible increase in the amount of infection detected by this means. These observations were compared with two previous surveys of white school children, one made in Massachusetts with the Pirquet test, and the other made in Philadelphia with the intracutaneous test, which showed a higher incidence of infection in Philadelphia. Children in schools near Boston were found to have tuberculous infection less frequently than public school children in other parts of Massachusetts. In an institution near Boston the incidence of infection was higher than that of public school children. It was found that a mathematical factor, a "correction figure," could not be devised to convert results obtained by the one method into those obtained by the other.

**Filtered Air Chambers in Tuberculosis.**—Barach treated three patients presenting active bilateral pulmonary tuberculosis for eleven weeks in filtered air chambers. He observed no specific effects due to the inhalation of filtered air. A leak-tight room was equipped with a ventilation apparatus capable of passing the entire cubic contents of the room through a fine wool filter each minute. After the air was filtered of 99 per cent of the dust and bacteria contained in it, it was passed over cold pipes for cooling and condensation of the moisture contained in it, and then heated so that optimal conditions of temperature and humidity prevailed in the room. Two of the patients showed no improvement except for a slight gain in weight. The other patient showed more gain in weight and a decreased temperature and pulse range, but not any greater than one would expect from eleven weeks' rest in bed. Stereoroentgenograms of the chest of the first two patients showed a slight increase in the process. In the other one, the infiltration was noted as essentially unchanged with a slight possible decrease on the left side. The patients were kept at rest in bed and received a high caloric diet and symptomatic medication when it was required for cough or bowel movements.

## Annals of Medical History, New York

**5:** 205-314 (May) 1933

Willard Parker. J. Ruhräh, Baltimore.—p. 205.
Reflection of Arabian Medicine at Salerno and Montpellier. L. M. Sa'di, Detroit.—p. 215.
Arabian Medicine as Represented in Memoirs of Usâmah Ibn-Munqidh. Dana C. Munro, Princeton, N. J., and C. D. Haagensen, New York.—p. 226.
George E. Goodfellow, Frontier Surgeon and Soldier (1855-1910). M. B. Wesson, San Francisco.—p. 236.
Short History of Sweating Sickness. M. B. Shaw, Baltimore.—p. 246.
Earliest Suggestion of Use of Cocaine for Local Anesthesia (Moreno y Maiz, 1868). W. F. von Oettingen, Cleveland.—p. 275.
Introduction to History of Women in Medicine: I. Medical Women Before Christianity. Kate Campbell Hurd-Mead, Haddam, Conn.—p. 281.

## Annals of Surgery, Philadelphia

**97:** 641-800 (May) 1933

Evaluation of Tannic Acid Treatment of Burns. J. B. Mason, Philadelphia.—p. 641.
*Treatment of Old Unhealed Burns. J. S. Davis and E. A. Kitlowski, Baltimore.—p. 648.
*Study in Extensive Cutaneous Burns. M. A. McIver, Cooperstown, N. Y.—p. 670.
Arm-Chest Adhesions and Their Plastic Reconstruction by the Tube Flap Method. J. Kulowski, Iowa City.—p. 683.
Artificial Inguinal Hernia. E. H. Windsberg, Providence, R. I.—p. 693.
Hernia into Prevesical Space. I. J. Walker, Boston.—p. 706.
Intersigmoid Hernia. D. M. Vickers and S. T. Fortuine, Cambridge, N. Y.—p. 713.
Strangulated Femoral Hernia: Anatomy and Surgical Treatment. V. S. Counseller and F. W. Cox, Rochester, Minn.—p. 717.
Strangulated Femoral Cystocele. A. P. Vastola, Waterbury, Conn.—p. 724.
Osteomyelitis of Skull. I. Cohen, New York.—p. 733.
Use of Continuous Intravenous Infusions in Acute Abdominal Crises. I. S. Ravdin and C. G. Johnston, Philadelphia.—p. 749.
*Tropacocaine Hydrochloride in Spinal Anesthesia: Observations Based on One Thousand Operations. J. A. Lazarus, C. J. Pick and A. A. Rosenthal, New York.—p. 757.
Torsion of the Omentum. C. E. Farr and R. F. Bachmann, New York.—p. 766.
Bilateral Snapping Thumbs. E. L. Compere, Chicago.—p. 773.

**Treatment of Unhealed Burns.**—Davis and Kitlowski state that the condition of patients with old unhealed burns is usually poor. They must be built up before skin grafting can be done successfully. The unhealed area should be grafted as soon as the granulations are in suitable condition, and healing

should be induced as quickly as possible. The authors believe that the small deep grafts are the best type to use, as they can be obtained from comparatively small areas of skin, some of which could not be utilized to furnish larger grafts. In these old burn cases, subsequent operative work for the release of scar contractures is almost always necessary. Scar contraction must be combated during treatment by suitable traction apparatus, so that permanent deformity will be minimized. The operative relief of scar contractures, which often occur in most carefully treated cases, should not be attempted for at least six months after healing is complete, which is about the time it takes for the scars to be loosened and softened by massage and passive motion. The authors report six cases of unhealed burns illustrating some of the difficulties encountered in treating these burns and showing the successful methods used to induce healing.

**Extensive Cutaneous Burns.**—McIver presents a study of sixteen patients with extensive cutaneous burns of the body and extremities, five of whom died. He observed that there was an increase in the white and red blood counts, an increase in the percentage of red cells in proportion to plasma, and a diminution in the sedimentation rate of the red cells. Blood chloride values were in essentially normal range (patients presenting the more serious burns received large volumes of physiologic solution of sodium chloride). Only two patients showed a striking increase in the nonprotein nitrogen of the blood; these two died, and the increase was most marked in the terminal stage. Certain patients showed some lowering of the total plasma protein. When the blood sugar was determined soon after the burns occurred, it was high in most cases. Carbon dioxide values were essentially normal early in the disease; two patients later developed a definite acidosis. The composition of the blister fluid closely resembled that of blood plasma. The urinary output was low and the excretion of the chlorides diminished; this was most marked in the more severely burned patients. Correction of the marked concentration of the blood by adequate fluid intake, while important, frequently does not relieve all the symptoms or prevent a fatal outcome; it seems likely that there is some other important factor in the toxemia of burns.

**Tropacocaine Hydrochloride in Spinal Anesthesia.**—After using various agents for spinal anesthesia, Lazarus and his associates came to the conclusion that the best results are obtained with tropacocaine hydrochloride, their judgment being based on the following observations: 1. Tropacocaine is safer and more dependable than other agents they have employed. 2. The ease with which it is administered is of decided advantage. 3. It is free from marked untoward effects. 4. Compared with other agents there is a diminished degree of shock, both operative and postoperative, which is noteworthy. 5. There is a lessened degree of nausea and vomiting when tropacocaine is used compared with other products. 6. A lessened incidence and severity of headaches is also noted in comparison. 7. It is rapid in action. In 95 per cent of their 1,000 cases, anesthesia occurred either immediately or within three minutes after the injection of tropacocaine. 8. In 99 per cent of the cases the anesthesia was complete. 9. The duration of the anesthesia is satisfactory. 10. There is a marked contrast of the physical comfort and mental attitude of the patient as compared to general anesthesia.

## Archives of Ophthalmology, Chicago

**9:** 701-892 (May) 1933

*Leptotrichosis Conjunctivae (Parinaud's Conjunctivitis): Artificial Cultivation of Leptotriches in Three of Four Cases. F. H. Verhoeff and M. J. King, Boston.—p. 701.
Glaucoma and Naevus Flammeus. C. S. O'Brien and W. C. Porter, Iowa City.—p. 715.
Tumors Affecting Optic Chiasm and Optic Tracts: Brief Critical Survey of Their Clinical and Anatomic Features. J. H. Globus, New York.—p. 729.
Ophthalmology in Bible and in Talmud. B. L. Gordon, Atlantic City, N. J.—p. 751.
Leber's Disease. T. B. Holloway, Philadelphia.—p. 789.
Anterior Chamber Punctures in Relation to Intra-Ocular Tension. P. C. Kronfeld, Chicago.—p. 801.

**Leptotrichosis Conjunctivae.**—Verhoeff and King state that there is a disease of the conjunctiva associated with inflammatory enlargement of the preauricular gland which is a clinical and histologic entity and which is due to infection with a leptothrix. This disease is commonly known as Parinaud's conjunctivitis, although Parinaud did not describe his three cases in sufficient detail to establish them as a complete entity. In three of four recent cases the authors succeeded in obtaining the organisms in pure culture on artificial mediums. In each of these cases the clinical and the histologic features were typical, and by special staining leptotriches were demonstrated in the tissues. Special mediums and conditions of partial oxygen tension were required for the first growths, but when once obtained the organisms grew on ordinary mediums. Inoculations of the organisms into the conjunctivae of rabbits and of guinea-pigs produced lesions clinically and histologically similar to those of the disease in human beings. The lesions, however, quickly disappeared, and were not associated with enlargement of the regional lymph nodes. The one attempt made to recover the organisms from an experimental lesion was successful.

## Archives of Surgery, Chicago

**26:** 735-932 (May) 1933

Plasma Cell Mastitis: Lesion Simulating Mammary Carcinoma. Clinical and Pathologic Study: Report of Ten Cases. F. E. Adair, New York.—p. 735.
*Surgical Attempts at Increasing Sugar Tolerance. G. de Takáts and F. P. Cuthbert, Chicago.—p. 750.
*Cardiac Innervation: Experimental and Clincial Studies. J. C. White, W. E. Garrey and J. A. Atkins, Boston.—p. 765.
Bone Growth and Pathology as Seen in Femur (and Tibia): VII. Studies on Femur. N. W. Ingalls, Cleveland.—p. 787.
Use of Rib Grafts for Fusion of Spinal Column. J. D. Bisgard, Chicago.—p. 796.
Lymphoblastomas of Gastro-Intestinal Tract. T. S. Raiford, Baltimore.—p. 813.
*Erosion of Femoral Artery, Secondary to Pathologic Fracture Due to Osteomyelitis: Report of Case in Which Common Femoral Artery Was Ligated. J. Kulowski and M. E. Pusitz, Iowa City.—p. 836.
Blood Supply of Large Intestine: Its Surgical Considerations. J. A. Steward and F. W. Rankin, Rochester, Minn.—p. 843.
Experimental Pleural Adhesions. S. Hirshfeld, J. Cohen and A. P. Stout, New York.—p. 892.
Action of Normal Skin on Bacteria. Justina H. Hill and E. C. White, Baltimore.—p. 901.
*Effect of Various Anesthetics on Cholesterol and Sugar Content of Blood. C. A. Hospers, Chicago.—p. 909.
Fiftieth Report of Progress in Orthopedic Surgery. J. G. Kuhns, E. F. Cave, S. M. Roberts and J. S. Barr, Boston; J. A. Freiberg, Cincinnati; J. E. Milgram, New York; G. Perkins, London, England, and P. D. Wilson, Boston.—p. 923.

**Sugar Tolerance.**—De Takáts and Cuthbert conducted four series of experiments with the object of increasing sugar tolerance in the normal dog: (1) ligation of the tail of the pancreas, (2) ligation of the tail of the pancreas with denervation of the suprarenals, (3) denervation of the liver and (4) celiac ganglionectomy. The first procedure laid stress on an increased or uninhibited output of insulin, which does not persist in the normal animal indefinitely. When suprarenal denervation is added, however, to the first operation, the tolerance is maintained on a high level. Denervation of the liver did not affect sugar tolerance. Celiac ganglionectomy raised the sugar tolerance to heretofore unobserved levels, and its effect has lasted as long as fourteen months unchanged. Tests for susceptibility to epinephrine and insulin showed that denervation of the liver did not alter the normal response to either of these hormones. However, suprarenal denervation and celiac ganglionectomy flattened the epinephrine-glycemia curves and markedly increased the insulin hypoglycemia. These tests indicate the profound influence of these operations on carbohydrate metabolism.

**Cardiac Innervation.**—Through the use of Sutton and Lueth's method of temporarily occluding a branch of the left coronary artery in dogs, White and his associates found that the resulting ischemia of the heart muscle can be counted on to produce characteristic changes in the behavior of the animal which closely resemble the manifestations of angina pectoris in man. They employed this procedure in a series of twenty-one dogs to test the effectiveness of various neurosurgical operations for interrupting the pathways of cardiac pain. The result of these experiments shows that cardiac pain is not transmitted by the vagus nerves. It is not prevented when afferent impulses from the areas to which cardiac pain is usually referred are blocked by sectioning the upper intercostal nerves on both sides. Bilateral resection of both stellate ganglions may diminish but does not block all sensory stimuli from the heart. A distinct

sensory response has been obtained in five of six animals in which this operation has been done. Bilateral removal of the sympathetic ganglions from the stellate down through the fourth thoracic ganglion or section of the upper five posterior dorsal nerve roots appears to interrupt all sensation from the heart. The motor pathways to the heart cannot be completely destroyed by bilateral excision of the stellate ganglions. The upper thoracic ganglions below the stellate ganglion send important motor and sensory fibers directly across the posterior mediastinum to the posterior cardiac plexus. When these are stimulated electrically, the heart rate may be augmented as much as 58 per cent. The authors believe that these experiments explain the frequent failures and poor results of the many different modifications of cervical sympathectomy which have been recommended for the relief of angina pectoris. No cervical sympathectomy can produce either a complete sensory or motor denervation of the heart. No operation performed through a cervical incision can give a satisfactory exposure for the excision of these important lower ganglions or the section of their communicant rami. In four patients in whom the authors resected the upper dorsal ganglions through a posterior thoracic approach, the relief of angina pectoris has been satisfactory. The operative risk involved, however, is too great for the routine use of this procedure. For the routine treatment of angina pectoris they recommend paravertebral injections of alcohol into the upper four to five thoracic ganglions and their rami. In a series of twenty-three patients treated in their clinic, injection has given excellent results in 50 per cent. Intractable angina pectoris has been reduced to a much milder form, which can be easily handled by routine medical measures, in another 30 per cent. In the remaining 20 per cent, the poor result has been obviously due to incomplete blocking by the alcohol. Their experiments on animals indicate that the patients who fail to gain relief by this relatively safe procedure can still be relieved by section of the upper thoracic spinal nerve roots.

**Erosion of Femoral Artery.**—Kulowski and Pusitz report the case of a girl, aged 13, in whom they ligated the common femoral artery because of secondary hemorrhage incident to a pathologic fracture in osteomyelitis. To the list of complications of osteomyelitis is added and elaborated erosion of the femoral artery. The authors emphasize the prevention of pathologic fracture in osteomyelitis by adequate protection, as advocated by Orr. They state that this extreme degree of involvement will probably not occur if adequate primary drainage is established as soon as the diagnosis of osteomyelitis is made. A primary adequate cast, in the great majority of cases, will enable the patient to develop sufficient resistance to combat the infection, after final drainage has been established. Amputation is resorted to only as a life-saving measure. The danger of secondary hemorrhage following an extensive drainage of the femur is minimal if the operator confines himself to the lateral side of the thigh and limits his manipulations to blunt dissection in the region of the great vessels. When secondary hemorrhage does occur, a window can be made and the operative field quickly exposed. The cast will minimize the patient's early excitable movements and tend to lessen the degree of hemorrhage.

**Blood Cholesterol in Anesthesia.**—According to the experiments of Hospers, continuous ether anesthesia in dogs and rabbits is accompanied by a hypercholesteremia that, in ordinary surgical anesthesia, reaches a peak in from sixty to ninety minutes and thereafter gradually diminishes, returning to approximately normal limits in from four to five hours. Continuous chloroform anesthesia is accompanied by a slight immediate change but by a gradual and continuous rise in the blood cholesterol proportional to the duration of the anesthesia. Ethylene and nitrous oxide anesthesias are accompanied by no changes in the blood cholesterol other than those explainable by excitement and imperfect anesthesia. Excitement is accompanied by a hypercholesteremia. This factor increases, but it is not entirely responsible for the change found under ether anesthesia. It seems to be responsible for initial changes under chloroform and for the irregularity in the blood cholesterol values under ethylene and nitrous oxide. Ether anesthesia is also accompanied by a hyperglycemia that frequently tends to be proportional to the hypercholesteremia. Chloroform, ethylene and nitrous oxide anesthesias are accompanied by a hyperglycemia, as is excitement without anesthesia. Ethylene and nitrous oxide, as anesthetics, seem to be more physiologic in their action than ether and chloroform.

## Arkansas Medical Society Journal, Little Rock

**29:** 253-272 (May) 1933

Chorea. P. F. Barbour, Louisville, Ky.—p. 253.
Practical Points in Various Manifestations of Malaria. J. H. McCurry, Cash.—p. 255.
Faults of Our Fathers. A. G. Emerson, Bald Knob.—p. 261.

## Canadian Medical Association Journal, Montreal

**28:** 471-586 (May) 1933

Diagnosis and Treatment of Carcinoma of Colon and Rectum. D. F. Jones, Boston.—p. 471.
Effect of Tracheal Compression on Thyroid Gland. A. C. Abbott, A. M. Goodwin and Sara Meltzer, Winnipeg, Manit.—p. 481.
Parathyroid Dysfunction: Report of Case Treated with Parathormone and Irradiated Ergosterol. S. Ortenberg, Montreal.—p. 490.
Effect of Colloidal Thorium on Blood Picture. R. Gottlieb, Montreal.—p. 496.
Canadian Formulary and Reference Companion. V. E. Henderson and G. H. W. Lucas, Toronto.—p. 497.
Disturbances Produced in Rectum by Disease Elsewhere. E. A. Daniels, Montreal.—p. 499.
*Isolation of Corynebacterium Diphtheriae and Diphtheroids from Carriers, Cases and Normals. Marion M. Johnston and Mildred J. Kaake, Toronto.—p. 505.
Diabetes Insipidus: Case Report with Discussion. J. E. Long, Toronto.—p. 508.
Toxemias of Pregnancy. W. J. Stevens, Ottawa, Ont.—p. 513.
Functional Dyspepsia. J. W. Scott, Edmonton, Alta.—p. 518.
Some Brief Notes on Diagnosis and Treatment of Bone Tumors. B. L. Coley, New York.—p. 521.
*Digitalis Administration. D. M. Baltzan, Saskatoon, Sask.—p. 527.
Some Considerations Relating to Pain and Tenderness in Acute Mastoiditis. L. S. Barnes, Toronto.—p. 533.

**Isolation of Corynebacterium Diphtheriae.**—Johnston and Kaake isolated twenty-five strains of Corynebacterium diphtheriae, based on morphologic and carbohydrate reactions, from twenty-eight child carriers, three nurses and one employee. Virulence tests performed on twenty-two strains yielded twenty, or 90 per cent, that were positive. Eighteen strains of Corynebacterium diphtheriae were isolated from twenty clinical diphtheria patients. Virulence tests carried out with twelve strains yielded ten virulent strains. From 166 normal children, nine strains of avirulent micro-organisms that correspond morphologically and by carbohydrate tests with Corynebacterium diphtheriae were cultivated; diphtheroids were isolated from thirty-four, or 20 per cent, and observed in forty-four, or 26 per cent, of this population. Corynebacterium hoffmanni was more prevalent in nose than in throat cultures. The avirulent strains of Corynebacterium diphtheriae, whether from a patient, a carrier or a normal person, exhibited the characteristics of a "rough" colony. The coagulated blood tellurite medium prepared by the authors' method, essentially a modification of the method described by Anderson and his co-workers, is not infallible for isolation of Corynebacterium diphtheriae or of the diphtheroids, since nineteen out of ninety-six cultures failed to grow.

**Digitalis Administration.**—Baltzan states that, when digitalis is useful, there is no contraindication except in the rare case of the Adams-Stokes syndrome and the rare individual intolerance. A normal regular pulse is not against its use, nor are existing hyperpiesis, heart block or pulsus alternans. Digitalis should not be used as a routine in preparation for surgical operations unless there is congestive failure, in postoperative emergencies or collapse with anesthesia, in the early stage of coronary catastrophes, in the thyrotoxic heart unless there is coincident heart disease, as a routine in febrile conditions unless congestive failure is imminent, in neurocirculatory asthenia, and in the presence of undesirable effects or toxic symptoms. Cardiac failures requiring full digitalization are acute congestive heart failure with or without arrhythmia, auricular fibrillation with high ventricular rate, auricular flutter with low grade block, and tachycardia that is not primarily thyrotoxic or febrile. Cardiac decompensations requiring partial (therapeutic) digitalization are chronic auricular fibrillations with moderate tachycardia and pulse deficit, circulatory decompensations (passive congestions, static edemas) that do better with than without digitalis, and incipient heart failures complicating fevers or even thyrotoxicosis. Cardiac incompetences requiring supportive (tonic) digitalization are rheumatic heart disease with history of previous broken compensation,

enlarged heart with limited reserve force or recurrent cardiac asthma (the hypertensive case is not excluded), old people with dyspnea (old coronary apoplexies are not excluded if there is circulatory impairment), and some arrhythmias and extrasystoles, and sometimes in anticipation of paroxysmal fibrillation and flutter.

## Colorado Medicine, Denver

**30:** 169-204 (May) 1933

Pneumonia in Childhood. I. A. Abt, Chicago.—p. 173.
Relation of Radiology to Other Fields of Medicine. E. H. Skinner, Kansas City, Mo.—p. 179.
Rest and Shot Bags in Pulmonary Tuberculosis. G. B. Webb, Colorado Springs.—p. 183.
Neurologic Diagnosis of Pernicious Anemia, with Remarks on Treatment. L. E. Daniels, Denver.—p. 185.

## Georgia Medical Association Journal, Atlanta

**22:** 161-200 (May) 1933

Organized Medicine. M. M. Head, Zebulon.—p. 161.
Effects of Injections of Ovarian Follicular and Anterior Pituitary Hormones on Conception and Pregnancy in Laboratory Animals. G. L. Kelly, Augusta.—p. 164.
Malignant Endocarditis: Report of Case. A. Dimmock, Atlanta.—p. 174.
Common Duct Obstruction: Report of Ten Cases. L. Grove and J. C. Read, Atlanta.—p. 178.
Delayed Secondary Appendiceal Abscess: Report of Case. J. C. Ivey and W. W. Daniel, Atlanta.—p. 182.
Blood Pressure in Five Hundred Physical Examinations. R. L. Carter, Thomaston.—p. 186.

## Illinois Medical Journal, Chicago

**63:** 389-488 (May) 1933

Medical Economics and Mental Disorders. J. H. Hutton, Chicago.—p. 441.
Health Education Over the Radio. W. W. Bauer, Chicago.—p. 444.
Educational Committee of the Illinois State Medical Society: Its Aims and Accomplishments. C. J. Whalen, Chicago.—p. 450.
Carcinoma of the Bladder. H. L. Kretschmer, Chicago.—p. 454.
Hay Fever in Chicago and Suburbs: Clinical, Field and Air Observations. S. M. Feinberg, Chicago, and O. C. Durham, North Chicago.—p. 464.
Botulism. W. E. Cary, Chicago.—p. 472.
Ophthalmologic Problems in General Practice. P. A. Halper, Chicago.—p. 473.
*Dermatitis Repens: Treatment with Intradermal Injections of Staphylococcus Antivirus Besredka. S. J. Zakon, Chicago.—p. 480.
Biopsy in Mammary Cancer. J. Ewing, New York.—p. 482.

**Dermatitis Repens.**—Zakon reports a case of dermatitis repens of six years' duration with recovery treated by intradermal injections of Besredka's antivirus. In the hope of producing an immunity of the skin to staphylococci, treatments with intradermal injections of Besredka's staphylococcus antivirus were given at first twice a week, later once a week. A stock staphylococcus antivirus was used. The dosage was gradually increased from 0.1 to 0.5 cc. The sites of injection were the flexor surface of the forearms. Each injection produced a definite local reaction in the form of an inflammatory infiltrated papule surrounded by an erythematous zone. The reaction usually reached its height in forty-eight hours and then gradually subsided. Injections were given for more than five months. Locally, a 10 per cent boric acid petrolatum ointment was used. Since the condition cleared up, the affected hand and wrist have increased in size. Observation at frequent intervals has revealed no recurrence.

## Indiana State Medical Assn. Journal, Indianapolis

**26:** 209-258 (May 1) 1933

Roentgenology from Surgical Standpoint. R. L. Lochry, Indianapolis.—p. 212.
Atelectasis. W. G. Crawford, Terre Haute.—p. 213.
Hernial Gangrenous Appendicitis. S. D. Malouf, Peru.—p. 218.
Medical Poor Relief in Grant County. E. O. Harrold, H. E. List and E. F. Jones, Marion.—p. 221.
Female Sex Hormones. M. V. Kahler, Indianapolis.—p. 224.
The Chiropractic Situation. F. Jett and A. W. Cavins, Terre Haute.—p. 229.

## Iowa State Medical Society Journal, Des Moines

**23:** 247-298 (May) 1933

Diagnostic Errors in Gynecology. E. Von Graff, Iowa City.—p. 247.
Foreign Proteins as an Aid in Ocular Infections. E. Cobb, Marshalltown.—p. 250.
Pernicious Anemia. D. M. Blum, Des Moines.—p. 255.
Postmenopausal Vaginal Bleeding. P. T. Brown, Iowa City.—p. 261.
Symptoms and Diagnosis of Heterophoria. C. E. Chenoweth, Mason City.—p. 262.
Visual Field Changes: Three-Dimensional Model for Demonstration Purposes. A. M. Dean, Council Bluffs.—p. 268.

## Journal of Bacteriology, Baltimore

**25:** 435-544 (May) 1933

Pipet Electrode for Determination of *p*H in Biologic Fluids. H. E. Goresline, Washington, D. C.—p. 435.
Some Results on Use of Crystal Violet in Bacteriologic Culture Mediums for Water Analysis. C. N. Stark and C. W. England, Ithaca, N. Y.—p. 439.
Biology of Tubercle Bacillus: III. Does the So-Called Fatty Capsule Serve to Protect the Tubercle Bacillus? J. Weinzirl, Seattle.—p. 447.
Species of Escherichia-Aerobacter Organisms Responsible for Some Defects in Dairy Products. W. B. Sarles and B. W. Hammer, Ames, Iowa.—p. 461.
Germicidal Efficiency of Sodium Hydroxide. E. C. McCulloch, Madison, Wis.—p. 469.
Oxidation-Reduction Potentials in Cultures of Staphylococcus Aureus. C. E. Clifton, Stanford University, Calif.—p. 495.
Studies on Cultural Requirements of Bacteria: III. Diphtheria Bacillus. J. H. Mueller, Katharine S. Klise, E. F. Porter and A. Graybiel, Boston.—p. 509.
Action of Hexylresorcinol on Bacteria in Certain Food Products. C. F. Poe and Hazel A. Fehlmann, Boulder, Colo.—p. 521.
Further Studies on Differentiation of Human and Animal Strains of Hemolytic Streptococci. P. R. Edwards, Lexington, Ky.—p. 527.
Large-Celled Dissociative Form of Escherichia Coli and Its Relation to So-Called Pettenkofer Bodies. R. V. Hussong, Ithaca, N. Y.—p. 537.

## Journal of Experimental Medicine, New York

**57:** 705-880 (May 1) 1933

Effect of Restriction of Protein Intake on Serum Protein Concentration of the Rat. A. L. Bloomfield, San Francisco.—p. 705.
Changes in Bacterial Volume as Result of Specific Agglutination. F. S. Jones and R. B. Little, Princeton, N. J.—p. 721.
Significance of Changes in Antigenic Volume as Result of Specific Agglutination. F. S. Jones and R. B. Little, Princeton, N. J.—p. 729.
Further Observations on Cultivation of Vaccine Virus in Lifeless Mediums. T. M. Rivers and S. M. Ward, New York.—p. 741.
Lymphatic Participation in Human Cutaneous Phenomena: Study of Minute Lymphatics of Living Skin. S. S. Hudack and P. D. McMaster, New York.—p. 751.
Electrolyte Balance Studies in Adrenalectomized Dogs, with Particular Reference to Excretion of Sodium. R. F. Loeb, D. W. Atchley, Ethel M. Benedict and Jessica Leland, New York.—p. 775.
Inherited and Acquired Factors in Resistance to Infection: I. Development of Resistant and Susceptible Lines of Mice Through Selective Breeding. L. T. Webster, New York.—p. 793.
Id.: II. Comparison of Mice Inherently Resistant or Susceptible to Bacillus Enteritidis Infection with Respect to Fertility, Weight and Susceptibility to Various Routes and Types of Infection. L. T. Webster, New York.—p. 819.
*Comparative Study of Subcutaneous Nodules in Rheumatic Fever and Rheumatoid Arthritis. M. H. Dawson, New York.—p. 845.
*Phenomenon of Local Skin Reactivity to Bacterial Filtrates in Its Relation to Bacterial Hypersensitiveness. G. Shwartzman, New York.—p. 859.
Studies on Etiology of Spontaneous Conjunctival Folliculosis of Monkeys: II. Bacteriologic Experiments. P. K. Olitsky, J. T. Syverton and J. R. Tyler, New York.—p. 871.

**Nodules in Rheumatic Fever and Rheumatoid Arthritis.**—Dawson presents a comparative study on the subcutaneous nodules in rheumatic fever and rheumatoid arthritis. He states that these lesions are highly characteristic of the two diseases and that they represent different phases of the same fundamental pathologic process. However, the presence of closely related or even identical lesions in two separate clinical entities cannot be considered valid evidence in support of the hypothesis that the two diseases are etiologically related. Comparative clinical studies on the relationship of rheumatic fever and rheumatoid arthritis will be reported later. These studies, as well as serologic investigations on the two diseases which have been previously reported, lend further support to the conception that rheumatic fever and rheumatoid arthritis are intimately related and possibly different responses of affected persons to the same etiologic agent.

**Local Skin Reactivity to Bacterial Filtrates.**—The observations of Shwartzman demonstrate that injection of normal horse serum into skin areas of rabbits prepared twenty-four hours previously by injection of horse serum, histamine diluted 1:1,000 and sterile meat infusion broth did not elicit any hemorrhagic necrosis. Moreover, the horse serum failed to elicit the reaction in areas prepared with bacterial filtrates devoid of skin preparatory potency (i. e. Streptococcus viridans culture filtrate). It was necessary to allow a definite incubation period for the preparatory effect of a potent bacterial filtrate. The results were negative if the injections immediately followed each other or were carried out within six hours. The interval of time successfully employed was twenty-four hours. The sensitization of rabbits was accomplished by single intravenous injections seven days prior to the tests. Shorter incubation periods were insufficient. The reaction observed was specific.

Reinjection of prepared areas with sheep, guinea-pig and human serum in rabbits sensitized by single injections of horse serum elicited no reactions. Some of the rabbits were bled on the day of preparatory injections and the serums tested for precipitins against horse serum. There was no apparent parallelism between the precipitin titers of the various serums and the incidence of the reactions. These were easily obtained in most of the rabbits tested. Experiments were carried out in order to determine whether the reaction could be passively transferred to normal rabbits. A number of experiments clearly demonstrated the specificity of the passive transfer. In the experiment with pneumococcus type III filtrate, serologic type specificity was observed. No incubation period was required for the passive sensitization. In the case of actively sensitized rabbits it was necessary to allow a definite incubation period for the preparatory effect of the bacterial filtrates.

## Journal of Pharmacology & Exper. Therap., Baltimore

**48:** 1-125 (May) 1933

Study of Effects of Agave Concentrate in Treatment of Experimental Nephritis Induced in Animals: I. Nephritis Induced in Rabbits by Use of Tartrates. H. D. Jones, assisted by K. D. Crane, G. B. Johnston and C. R. Henry, Auburn, Ala.—p. 1.

Id.: II. Nephritis Induced in Dogs by Use of Uranium Nitrate. H. D. Jones, assisted by R. C. Hughes and G. B. Johnston, Auburn, Ala.—p. 25.

Effects of Some Quaternary Ammonium and Analogous Compounds on Autonomic Nervous System. R. Hunt and R. R. Renshaw, New York.—p. 51.

Interaction of Histamine and Nicotine on Intestine. F. Bernheim, Durham, N. C.—p. 67.

Action of Veratrine and Urethane on Tissue Oxidations. F. Bernheim and Mary L. C. Bernheim, Durham, N. C.—p. 73.

Physiologic Action of Norconessine. A. C. White, Beckenham, Kent, England.—p. 79.

Effect of Separated Fractions of Posterior Lobe of Pituitary on Fat Content of Liver. A. C. White, Beckenham, Kent, England.—p. 89.

Contribution to Pharmacology of Anabasine. H. B. Haag, Richmond, Va.—p. 95.

Ethers and Thio-Ethers of Triethylammonium Compounds. R. Hunt and R. R. Renshaw, New York.—p. 105.

## Kentucky Medical Journal, Bowling Green

**31:** 223-270 (May) 1933

Agranulocytosis. C. H. Fortune, Lexington.—p. 225.

Lymphatic Leukemia. T. J. Marshall, Paducah.—p. 229.

Indications in Anemia for Surgery of the Spleen. A. R. Quigley, Maysville.—p. 230.

Symposium on the New-Born: Conservative Methods of Treatment of Asphyxia Neonatorum. Nora D. Dean, Louisville.—p. 233.

Id.: Hemorrhagic Diseases of the New-Born. L. Palmer, Louisville.—p. 236.

Id.: Intracranial Birth Injuries. J. H. Pritchett, Louisville.—p. 237.

Id.: Infection in the New-Born. P. F. Barbour, Louisville.—p. 239.

Rectal Diseases in General Practice. R. C. Alley, Lexington.—p. 246.

Gallstones Simulating Appendicitis: Report of Case. L. W. Frank, Louisville.—p. 248.

Eczema. R. L. Kelly, Louisville.—p. 249.

Colon Bacillus: A Comparison. J. Martin, Cynthiana.—p. 254.

Chronic Pancreatitis with Diabetes and Obstructive Jaundice. W. O. Johnson, Louisville.—p. 256.

When a Man Is a Man. J. F. Dunn, Arlington.—p. 258.

Symposium on Obstetrics: Complications of Pregnancy, Early and Late Hemorrhages. L. C. Redmon, Lexington.—p. 260.

Id.: The Puerperium and Its Complications. N. C. Witt, Franklin.—p. 263.

## Maine Medical Journal, Portland

**24:** 53-68 (April) 1933

Use of Neutral Ammonium Tartrate in Treatment of Lime Burns of the Eye. W. J. Gilbert and P. J. Mundie, Calais.—p. 55.

*Ocular Signs in Brain Injuries. H. F. Hill, Waterville.—p. 58.

Diabetic Coma: Report of Four Cases. E. R. Blaisdell, Portland.—p. 63.

**Ocular Signs in Brain Injuries.**—Hill states that there should be an expert ophthalmologist in daily attendance on all cases of cerebral trauma. Pupillary changes are important. A dilated pupil indicates the side of the lesion. Fixed pupils denote a serious prognosis. With fracture of the base, care must be taken to determine whether there is a fissure through the optic canal. Roentgenograms are unsatisfactory at the present time. Diagnosis necessarily must be made with the ophthalmoscope and by field vision tests. The fundi should be repeatedly examined. The disk shows changes early with increased intracranial pressure. Visual fields aid in localization and give information as to progress and prognosis. Charting of the blind spot gives evidence of increased intracranial pressure even before changes can be seen in the disk with the ophthalmoscope. In industrial cases, especially, the permanent visual defects should be charted. These are found in from 25 to 30 per cent of all serious cases.

## Medicine, Baltimore

**12:** 83-244 (May) 1933

Acute Poliomyelitis as Primary Disease of Central Nervous System: Reconsideration of Pathology, Symptomatology and Treatment, Based on Hypothesis of Axonal Propagation of Infective Agent. H. K. Faber, San Francisco.—p. 83.

*Idiopathic Hypochromic Anemia. M. M. Wintrobe and R. T. Beebe, Baltimore.—p. 187.

**Idiopathic Hypochromic Anemia.**—On the basis of 473 cases of a microcytic, hypochromic type of anemia usually associated with achlorhydria, which have been described in the literature, and of twenty-five cases personally observed, Wintrobe and Beebe discuss the etiologic features, symptomatology, laboratory observations, pathology, diagnosis, treatment, course and prognosis, as well as pathogenesis of this anemia. It is defined as an anemia of unknown etiology occurring especially, but not exclusively, in women from the third to the fifth decades of life and characterized by an insidious onset, long duration, symptoms such as are common to all anemias and, in addition, glossitis, stomatitis, dysphagia, paresthesias without objective neurologic observations, and often splenomegaly and koilonychia. In the great majority of cases there is evidence of disturbed gastric secretion (achlorhydria). The anemia is characterized by microcytosis and hypochromia, ready response to adequate iron therapy and, frequently, a tendency to relapse when treatment is discontinued. The evidence so far available suggests that the fundamental disturbance may be defective gastric secretion with faulty utilization or synthesis from the diet of material which is necessary for hemoglobin formation. Anemia possibly develops because the demands for hemoglobin are in excess of the capacity of the individual to meet them. The requirements of menstruation and repeated pregnancies probably explain the preponderance of this type of anemia in women. Such factors as a diet deficient in foods potent for hemoglobin formation, excessive menstrual flow, blood loss from hemorrhoids, or dysphagia and consequent lack of food, are considered secondary aggravating factors and not primary etiologic agents. The authors point out the advisability of recognizing this condition as a single entity.

## Minnesota Medicine, St. Paul

**16:** 287-378 (May) 1933

Status of Obstetric Practice in Minnesota. J. C. Litzenberg, Minneapolis.—p. 287.

Leukemia and Its Treatment. L. H. Fredricks, Bismarck, N. D.—p. 296.

Agranulocytosis. E. T. F. Richards and K. Ikeda, St. Paul.—p. 299.

Acute Mononucleosis or Glandular Fever: Report of Case. R. C. Logefeil, Minneapolis.—p. 305.

*Gastric and Duodenal Ulcer: Results of Immunization Treatment. A. R. Hufford, Grand Rapids, Mich.—p. 310.

*Use of Mucin in Treatment of Peptic Ulcer. A. B. Rivers and Frances R. Vanzant, Rochester.—p. 314.

Multiple Myeloma: Precipitation of Bence-Jones Protein in Blood. W. H. Karlins and A. R. Lundquist, Webster, S. D.—p. 318.

Some Clinical Aspects of Spinal Injuries. E. M. Jones, St. Paul.—p. 319.

The Human Foot: Functional Development and Weaknesses. M. S. Henderson, Rochester.—p. 323.

Present-Day Cancer Problems. F. L. Rector, Evanston, Ill.—p. 330.

*Undulant Fever Treated with Metaphen. A. C. Fortney, Fargo, N. D.—p. 335.

**Gastric and Duodenal Ulcer.**—From May 1927 to May 1931, Hufford treated 154 patients suffering from gastric and duodenal ulcers. The treatment was chiefly medical and consisted of a well balanced bland diet, a modification of the Sippy diet for ulcer recommended for the fourth week. The quantity and variety of food were gradually increased until the calories were sufficient for the patient to maintain weight and strength. Foods rich in vitamins A, B and C and in minerals were carefully retained in the diet. When necessary, the stomach was aspirated nightly and lavage was continued until secretions at night were controlled. An attempt was made to remove all evident foci of infection from the patients who were treated either surgically or medically, and all patients who could and would take the ulcer vaccine were given subcutaneous injections of it two times a week. The dosage was started with 0.1 cc.

and was increased from 0.1 to 0.2 cc. with each injection until 1 cc. was reached, and this was continued for from eight to ten consecutive weeks. Of the entire group of 154 patients, 116 were treated with the stock ulcer vaccine in addition to the diet and the oral medication of alkaline powders, antispasmodic drugs and, when necessary, alkaline liquid petrolatum and agar. All evident foci of infection were removed in seventy-one of this group, and ulcer has recurred in two, an incidence of 2.8 per cent. Forty-five of the 116 patients received inoculations of ulcer vaccine but did not have all foci of infection eradicated, and the ulcers of eight (17.8 per cent) recurred in from one to three years. Of the thirty-four patients who did not receive inoculations of ulcer vaccine in addition to the usual regimen, eighteen had all evident foci of infection removed, and the ulcers of eight (44.4 per cent) have recurred to date. Of the sixteen patients who did not have foci of infection completely eradicated, the ulcers of thirteen (81 per cent) recurred. Four patients of the 154 received surgical treatment only. The clinical results demonstrate that ulcer vaccine and the removal of foci of infection are two indispensable adjuncts to the usual dietetic and hygienic measures and offer more successful means of combating this chronic and recurring malady.

**Mucin in Treatment of Peptic Ulcer.**—Rivers and Vanzant used mucin in more than 150 cases of peptic ulcer. After several doses, some of the patients refused it because of the objectionable taste or because it made them more uncomfortable. A few of them were nauseated, and vomiting and diarrhea followed. In other cases, symptoms were not controlled and, usually, gastric acidity was not materially reduced. The authors observed that mucin seems to be most beneficial when combined with other approved methods of treatment, such as a nonstimulating diet, sedatives and a small amount of alkali. They place the patients on a regimen similar to that instituted by Sippy, but using less alkali. Milk is given every hour. At 10:30 a. m., 4:30 p. m. and 7:30 p. m., 30 Gm. of mucin is substituted for the usual hourly dose of alkali. The amount of alkali used varies, but it seldom exceeds 120 grains (from 7 to 8 Gm.) daily. After three or four days, this regimen is modified; the patients are permitted to spend part of their time out of bed, and a more liberal diet, consisting of puréed vegetables, cereals and various bland foods, is prescribed. Instead of taking milk hourly they take it twice between meals. Alkalis are taken three times daily, from 12 to 15 grains (0.8 to 1 Gm.) of soda, a bismuth compound or magnesia one hour after meals, and mucin is taken an hour before meals and at 10 p. m., in doses of from 20 to 25 Gm. After three or four days of this diet, an ambulatory regimen is substituted. The diet is limited to bland foods. Milk is given once between meals, and 10 or 15 grains (0.65 or 1 Gm.) of alkali may be used an hour after each meal. Mucin is given one hour before the meal and before the patient retires; from 60 to 70 Gm. is used daily. Throughout the treatment patients are encouraged to get as much rest and relaxation as possible, and this is facilitated by means of liberal amounts of sedatives, such as bromides and the barbiturates. Usually, atropine is combined with the other drugs. About 50 per cent of the patients responded favorably when mucin was employed in their treatment. The authors are therefore encouraged to continue its use and hope to ascertain the types of cases in which good results may be expected. They believe that in the presence of complications, such as obstruction, repeated gross hemorrhages and evidence of malignant disorders or penetration, or if nonsurgical methods have proved of no avail, treatment will be more safely carried out by operative measures.

**Undulant Fever Treated with Metaphen.**—Fortney presents a case of undulant fever which was observed from its onset and which was treated with metaphen 1:1,000 intravenously. The clinical duration of the disease was exactly ten days and the temperature became normal six days after the use of metaphen was instituted. No other drugs were used. No reactions followed the use of the drug. The fact that the drug was first used shortly after the clinical onset of the disease may account for the good response and one can only conjecture what results might be expected in a chronic case of undulant fever. The author believes that its use is indicated in all cases. The high agglutination titer (1:2,560), one month following discharge from the hospital, is striking.

## Southern Medical Journal, Birmingham, Ala.

**26:** 379-480 (May) 1933

Clinical Aspects of Diverticulitis of Colon. F. D. Gorham, St. Louis.—p. 379.
*Atrophic and Hypertrophic Arthritis of Spine. A. R. Shands, Jr., and M. O. Oates, Durham, N. C.—p. 384.
Bone Metastases from Carcinoma of Prostate. W. K. Kalbfleisch, Wheeling, W. Va.—p. 391.
Glaucoma: Complications of Hypermature Cataract. R. K. Daily, Houston, Texas.—p. 396.
Myocardial Syphilis. J. C. Norris, Atlanta, Ga.—p. 399.
Rocky Mountain Spotted Fever (Eastern Type) in Southern States: Report of Six Cases in Tennessee. W. Litterer, Nashville, Tenn.—p. 407.
Rocky Mountain Spotted Fever. J. S. Crutcher, Jr., Nashville, Tenn.—p. 415.
Use of Embryo Chick in Investigation of Certain Pathologic Problems. E. W. Goodpasture, Nashville, Tenn.—p. 418.
Study of Sinuses in a Group of Patients Complaining of Vague Chest Symptoms. S. H. Sanders, Memphis, Tenn.—p. 420.
*Effective Method of Protein Fever Treatment in Neurosyphilis. M. O. Nelson, Tulsa, Okla.—p. 424.
Sclerosing Treatment of Varicose Veins. H. R. Black and H. S. Black, Spartanburg, S. C.—p. 429.
Cerebral Hemorrhage: Medical Aspects. C. Jamison, New Orleans.—p. 431.
Mental Hygiene of Involutional Period. H. Daspit, New Orleans.—p. 433.
Pylorospasm Due to Allergy: Simulating Infantile Pyloric Stenosis. R. M. Balyeat and C. M. Pounders, Oklahoma City.—p. 436.
Influence of Ruy Diaz De Isla on Question of American Origin of Syphilis: A Friendly Polemic. C. S. Butler and J. A. Biello, Brooklyn.—p. 438.
*Effects of Milk Injections in Chronic Pelvic Inflammatory Disease. E. H. Greene, Atlanta, Ga.—p. 443.

**Arthritis of Spine.**—Shands and Oates point out that, in a review of 668 cases in which roentgenograms of the spine were required, 243, or 36.4 per cent, of the cases showed arthritis of the spine. A classification of these cases by roentgen and clinical observations showed 67.4 per cent to be in the hypertrophic group and 32.1 per cent in the atrophic group. Of the patients, 57.6 per cent were men and 42.4 per cent were women. These cases have been analyzed according to the area of the spine involved. The average age at the onset of the sacro-iliac and lumbosacral cases is 33 years; of the dorsal and lumbar cases 42 years and of the cervical cases 46 years. Trauma as an etiologic factor was reported in 40 per cent of the sacro-iliac and lumbosacral cases, and in 23 per cent of the other areas of the spine. Radiation of pain was found to be more common in the sacro-iliac and cervical spine, and less common in the dorsal spine cases. In the cases of arthritis of the lumbar spine, sacro-iliac and lumbosacral areas, symptoms more nearly equaled the signs, and in the cervical spine symptoms are more often present without signs. The authors made a correlation of the roentgen changes with the signs and symptoms and a separate analysis of sixteen Strümpell-Marie cases and of one von Bechterew case.

**Protein Fever Treatment in Neurosyphilis.**—In the treatment of neurosyphilis as previously reported, Nelson gives for each paroxysm of fever two separate intravenous injections of combined typhoid vaccine instead of one. After administration of the first dose, which is of a size calculated to cause slight fever, two or three hours is allowed to elapse for the patient's temperature to reach its height, this point being determined by taking the temperature every twenty minutes. At the peak of the fever induced by the first dose, the second injection is given. Following the second dose, which seems to "explode" a physiologic charge created by the first, the patient's temperature usually rockets to the levels characteristic of malaria: 105, 106 or even 107 F. The author states that, by means of this method, fever consistently higher than that produced by ordinary methods is obtainable. Treatment by this method is less dangerous than by malaria, is more convenient and widely available, and at the same time probably makes use of bodily immunity reactions similar to those induced by malaria. Treatment of patients with resistant neurosyphilis by this method has been followed by improvement equal to that observed in similar cases treated by malaria.

**Effects of Milk Injections in Pelvic Disease.**—Greene states that the intramuscular injection of sterile milk is a valuable adjunct in the treatment of chronic pelvic inflammatory disease. He submits graphs showing that the injection of milk is followed by leukocytosis, usually within four hours. Fresh milk is more effective than the commercial preparation

employed. Patients feel better, gain in weight and continue their routine work after the injections. Major operations occasionally are avoided. Preoperative injections of milk make operations somewhat less difficult and abbreviate the period of convalescence. In 18,270 injections given over a period of five years there has been no evidence of untoward effect in any individual.

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## FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

### British Medical Journal, London

**1:** 811-858 (May 13) 1933

Encephalitis, Poliencephalitis and Vaccinial Encephalitis in Children. C. P. Lapage.—p. 811.
Treatment of Carcinoma of Breast by Radium Emanation. H. S. Souttar.—p. 813.
*Intradermal Tuberculin Test in Nontuberculous Adults. S. L. Cummins and A. C. Evans.—p. 815.
*Reinvestigation of Children Previously Examined by Tuberculin Tests. W. E. Lloyd and A. Margaret C. Macpherson.—p. 818.
Severe Anemia with Achlorhydria. C. H. Melland.—p. 820.
Congenital Absence of Vagina. N. Hodgson.—p. 822.
Note on Treatment of Impetigo. J. L. Newman.—p. 823.

**Intradermal Tuberculin Test.**—Cummins and Evans observed the variations in tuberculin sensitivity manifested by adults free from clinically recognizable tuberculosis and compared the observations in the nontuberculous with those in the clinically tuberculous groups. They noticed marked individual variations in cutaneous tuberculin sensitivity. These variations were apparent both in regard to end-point reactivity with serial dilutions and to the intensity of reaction as evaluated through measurement of the size of the area of reaction. In the groups of persons free from clinically apparent tuberculosis the variations were not associated with differences in general health, as tested by the rate of blood sedimentation in contrasted groups. In the healthy groups the women showed a more marked reactivity than the men, but both the men and the women of European race showed less reactivity than that recorded for South African native mine recruits in the report of the South African Tuberculosis Research Committee (1932). Young adult women are liable to a more acute and severe type of tuberculosis than corresponding male groups, and South African mine natives exhibit a still more marked liability to fatal acute tuberculosis. In other words, pronounced cutaneous tuberculin sensitivity in a group appears to be associated with liability to severe tuberculosis. In actively tuberculous groups, the reactivity of florid cases of the disease is greater than the reactivity of nontuberculous persons; and the reactivity of tuberculous men appears to be greater than that of tuberculous women in the small groups tested. Here, however, the observations are complicated by the gradual onset of "anergy," as the cases progress in severity and as the systemic disturbance increases, which tends to be more rapid in young women. This perhaps explains their lower sensitivity in the tuberculous group. The anergic state in tuberculous persons is associated not only with loss of tuberculin reactivity but also with marked increase in the rate of sedimentation of the red blood corpuscles.

**Reinvestigation After Tuberculin Tests.**—Lloyd and Macpherson state that the results of the repetition of the tuberculin test on 700 children whose ages varied from 1 to 15 years at the time of the first test show that allergy, once it is produced, persists in over 96 per cent of cases throughout childhood. A comparison of the different dilutions of old tuberculin which will produce a positive tuberculin reaction demonstrates the fact that there is a tendency for the degree of sensitivity to increase after an interval of one and a half to two years. Further, on separating the children into contact and noncontact groups, it is evident that a high degree of sensitivity in contact children is reached at an early age, whereas in a large proportion of noncontact children this degree of allergy is not reached at any age. The absence of any development of clinical tuberculosis in 700 children during the period of one and a half to two years is interesting, more especially as this number includes two children of from 1 to 2 years of age and seven under 3 years. That these children have remained apparently healthy throws doubt on the view held by some authors that a positive tuberculin reaction in a child under 2 years of age is evidence of active tuberculous disease.

### East African Medical Journal, Nairobi

**10:** 37-66 (May) 1933

Observations on Health in Relation to Diet in His Majesty's Central Prison, Uganda: I. Prison Diets and Morbidity. J. P. Mitchell.—p. 38.
Id.: II. Ocular Manifestations of Vitamin A Deficiency. H. B. Owen.—p. 53.
*Id.: III. New Cutaneous Manifestation in Syndrome of Vitamin A Deficiency. L. J. A. Loewenthal.—p. 58.

**Cutaneous Manifestation in Vitamin A Deficiency.**—Loewenthal observed a number of persons who presented a heretofore undescribed dermatosis, associated in the great majority of cases with the clinical manifestations of vitamin A deficiency. The dermatosis consists of a dryness of the whole skin, with the exception of the face, associated with a papular eruption most apparent on the extensor surfaces. The papules are smooth, black and shiny, and extremely irritable. Histologically, these papules are found to have as their nucleus an altered pilosebaceous follicle, which is sealed with a comedo and shows more or less evidence of perifolliculitis. These papules show no tendency to suppurate. The patients (seventy-four) were treated with cod liver oil in doses of 1 ounce (30 cc.) each daily, their diet remaining unchanged. After nine weeks, cure resulted in 98.6 per cent. No local treatment was given throughout this period. The only previous reference to cutaneous changes in vitamin A deficiency is that of Pillat, who describes a decay of the skin associated with multiple abscesses.

### Glasgow Medical Journal

**1:** 145-184 (May) 1933

Eczema: Survey of Position. J. F. Smith.—p. 145.
Complaints of Patients with Senile Cataract. W. J. B. Riddell.—p. 154.

### Indian Journal of Medical Research, Calcutta

**20:** 921-1242 (April) 1933

Filariasis in Trivandrum. M. O. T. Iyengar.—p. 921.
*Cholesterosis of Gallbladder in Indians: Clinical Study in Human Subjects and an Experimental Study in Rabbits. A. C. Ghose.—p. 939.
Bacterial Infection of Gallbladder: Clinical Study in Human Subjects and an Experimental Study in Rabbits. A. C. Ghose.—p. 951.
Interaction of Food and Sanitary Condition in Causation and Prevention of Thyroid Disease. R. McCarrison.—p. 957.
Hydrogen Ion Concentration in Organs and Body Fluids of Scorbutic Guinea-Pigs. R. McCarrison and G. Sankaran.—p. 971.
Rat Flea Survey of Mysore State. P. V. S. Iyer.—p. 975.
Influence of Blood Group in Certain Pathologic States. P. N. Mitra.—p. 995.
Action of Quinamine on Heart. J. C. David and C. Vareed.—p. 1005.
*Clinical Value of Rose Bengal Test for Determination of Total Functional Capacity of Liver. M. V. R. Rao.—p. 1009.
Metabolism of Carotene in Different Animals. B. Ahmad and K. S. Malik.—p. 1033.
Sun Disinfestation of Grains as Measure in Prevention of Plague: Note. C. G. Pandit, K. P. Menon and P. V. S. Iyer.—p. 1039.
Vitamin Content of Indian Mango. B. C. Guha and P. N. Chakravorty.—p. 1045.
Finding of Toxoplasma Cuniculi in Two Experimental Rabbits: Note. K. V. Krishnan and C. Lal.—p. 1049.
Reversible Oxidation: Reduction of Glutathione in Liver: Note. K. C. Sen.—p. 1051.
*Complement Fixation in Variola. K. V. Venkataraman.—p. 1063.
Seasonal Prevalence of Rats and Rat Fleas in Parts of South India. H. H. King and P. V. S. Iyer.—p. 1067.
Survey of Flora and Fauna of Water Supplies of Madras Presidency. S. A. Rafay, introduction by H. H. King.—p. 1083.
Studies on Cholera Bacteriophage: Part I. General Technic. I. N. Asheshov, Inna Asheshov, S. Khan and M. N. Lahiri.—p. 1101.
Id.: Part II. Classification of Bacteriophage and Its Practical Application. I. N. Asheshov, Inna Asheshov, S. Khan, M. N. Lahiri and S. K. Chatterji.—p. 1127.
Id.: Part III. Virulence and Development of Bacteriophage. I. N. Asheshov, Inna Asheshov, M. N. Lahiri and S. K. Chatterji.—p. 1159.
Biologic Assay of Digitalis Preparations in the Tropics. R. N. Chopra and J. S. Chowhan.—p. 1189.
Complement-Fixation in Filariasis. R. B. Lloyd and S. N. Chandra.—p. 1197.
Types of Tubercle Bacilli Causing Extrapulmonary Lesions in India. A. C. Ukil.—p. 1209.

**Cholesterosis of Gallbladder in Indians.**—Ghose, in his clinical studies and experiments on rabbits, observed that cholesterosis of the gallbladder is found in about one fourth of the total number of gallbladder diseases. It gives rise to clinical symptoms that can be eliminated only by the removal of the diseased organ. He describes the morbid anatomy and the histology of the condition. The presence of lipoid in the various coats of the gallbladder was demonstrated by lipoid stains. Inflammatory changes were present in most of the cases. There

was a definite rise in the cholesterol content of the blood, bile and gallbladder; therefore a blood cholesterol estimation, as a routine method prior to the operation, is of some diagnostic importance. Hypercholesteremia, produced by prolonged feeding of rabbits with pure cholesterol and by intraperitoneal injections of cholesterol, is capable of giving rise to the condition of cholesterosis of the gallbladder. Inflammation of the gallbladder, when associated with a hypercholesteremic condition, seems to hasten the disease. Cholesterosis of the gallbladder could not be produced by the infection of the gallbladder alone; i. e., without being associated with hypercholesteremia.

**The Rose Bengal Test.**—Rao studied the value of the rose bengal test in the diagnosis of cirrhosis of the liver and in determining its utility in the differentiation of ascites due to cirrhosis of the liver from other conditions resulting in ascites; e. g., cardiac decompensation, kidney inefficiency, chronic peritonitis, tuberculous peritonitis or malignant peritonitis. He used the modified technic described by Delprat and Stowe. He observed that the dye is entirely nontoxic to the human tissues, and no untoward symptoms were seen in any of the cases after intravenous injection of the dye in doses of 100 mg. for the adult. Marked retention of the dye was found in cases of cirrhosis and malignant disease of the liver. In cases of malignant metastatic disorders of the liver, the excretion of the dye depends on the amount of functionally active liver tissue still remaining. Marked retention of the dye without bilirubinemia constitutes an important observation in cases of decompensated portal cirrhosis of the liver. The author discusses the causes of this marked retention of the dye in portal cirrhosis and shows that the secondary anemia, which is seen in the later stages of the disease, cannot account for this marked retention. Jaundice associated with toxemias of the liver always produced retention of the dye. Slight retention of the dye was seen in long standing cases of passive congestion of the liver resulting from cardiac decompensation and in cases of ancylostomiasis in which the secondary anemia had persisted for a long time. The test is a valuable aid in differentiating ascites due to cirrhosis of the liver from other conditions producing ascites; e. g., cardiac decompensation, nephritis or peritonitis—simple, tuberculous or malignant. The results obtained in this investigation are in agreement with those obtained by the originators of the test. The test is more likely to be positive in those conditions in which there is diffuse destruction of the hepatic parenchyma than in those with localized disturbances. The test does not show any specific type of damage to the liver but only denotes the amount of functionally active liver tissue still present. The author points out that, while the retention of the dye is of great significance in the diagnosis of cirrhosis of the liver, its value in the prognosis is limited. He suggests that no useful purpose is served in calculating the "total function" of the liver from the percentage of dye present in the blood at the end of eight minutes. Taken in conjunction with the clinical observations and the results of other tests, the rose bengal test constitutes a valuable aid in the study of hepatic diseases.

**Complement Fixation in Variola.**—Venkataraman tested, against an antigen of calf lymph, the serums from twenty patients with smallpox, from two healthy adults who had had smallpox in childhood, from eight patients with chickenpox and from six Wassermann positive patients for the presence of specific complement fixation antibodies. He employed the usual modified Wassermann technic, except that he used a calf lymph which was a 1:5 glycerin dilution of the virus material diluted in 40 volumes of physiologic solution of sodium chloride at the time of the test and in which the coarser particles were allowed to settle down. All the serums used in the test were previously inactivated in a water bath at 56 C. for half an hour. They were used in dilutions ranging from 1:5 to 1:40, and the serum control in a dilution of 1:5. Pooled guinea-pig serum that had been left in contact with the clot over night was used as complement. This was titrated against 3 per cent sheep cells sensitized previously with 5 minimal hemolytic doses of amboceptor. Three minimal hemolytic doses of complement was used in the tests throughout. The unit of volume adopted was 0.1 cc. One volume each of the serum dilution, antigen and complement were mixed and allowed to fix for from twenty to twenty-two hours in a refrigerator (temperature from 6 C. to 8 C.). Then one volume of sensitized cells was added and the tubes were incubated in a water bath at 37 C. for half an hour. The readings were taken immediately. Specific complement fixation antibodies were regularly present in the cases of smallpox and were satisfactorily demonstrated by using the calf lymph antigen.

## Journal of Neurology and Psychopathology, London

**13:** 289-384 (April) 1933

Form of Progressive Cerebral Sclerosis in Infants Associated with Primary Degeneration of Interfascicular Glia. J. G. Greenfield.—p. 289.
Size in Mental Deficiency. W. R. Ashby and R. M. Stewart.—p. 303.
*Mental Symptoms Associated with Fifty-Eight Cases of Cerebral Tumor. L. Minski.—p. 330.

**Mental Symptoms Associated with Cerebral Tumor.**—Minski studied the mental symptoms in fifty-eight cases of cerebral tumor and made an attempt to assess their value, if any, in the localization of the tumors. Concurrently with these symptoms, the presence or absence of physical signs was noted with a view to helping in localization. He concludes that mental symptoms in cerebral tumor do not appear to depend on localization but rather on the rate of growth of the tumor and the previous personality of the patient. Mental symptoms occur more commonly with cerebral tumors (more with left-sided than right-sided ones), as, of the fifty-eight examined, forty-nine were cerebral and only five subtentorial. All the former and only one of the latter showed mental symptoms. In slow growing tumors personality changes predominate, the mood depending on the release of preformed tendencies. In this series, fourteen of the fifty-eight patients examined were depressive and seven manic. In rapidly growing tumors, changes in the intellectual sphere are marked and personality changes slight, while in the more rapidly growing tumors intellectual disturbances with clouded consciousness are found. In the former group were twenty-three, and in the latter six. Twenty-five patients showed reactions simulating functional psychoses, and in twelve of these physical signs were absent. Physical signs are less common in patients admitted to a hospital caring for the mentally deranged patient than in patients admitted to a neurologic hospital, while aphasia is commoner in patients seen in the former.

## Journal Obst. and Gynec. of Brit. Empire, Manchester

**40:** 397-540 (May) 1933

Physiology and Pathology of Isthmus Uteri. O. Frankl.—p. 397.
Uterine Inertia. A. Bourne and A. C. Bell.—p. 423.
*Histologic Classification of Cancers of Uterine Cervix, and Relation Between Cellular Structure and Prognosis After Radium Treatment. R. G. Maliphant.—p. 444.
Some Aspects of Cervical Pathology. G. I. Strachan.—p. 460.
Study of Ureteral Tone During Pregnancy. D. Baird.—p. 472.
Innervation of Uterus. A. A. Davis.—p. 481.
Hormonic Factors Controlling Functional Activity of Uterus. J. M. Robson.—p. 498.
Analysis of Nine Hundred and Thirty-Seven Cases of Postmenopausal Hemorrhage. E. C. Fahmy.—p. 506.
Fundal Rupture of Pregnant Uterus. H. Lloyd and P. J. Ganner.—p. 513.
Normal Labor and Its Anomalies: The Dividing Line. W. Taylor.—p. 516.
*Hydramnios. L. C. Rivett.—p. 522.
Obstetric Significance of Transverse Contraction of Pelvis. A. H. M. J. Van Rooy.—p. 526.

**Cancers of Uterine Cervix.**—Maliphant studied the relation between cellular structure and response to radium treatment in a series of 236 cases of cancer of the uterine cervix. The growths were divided histologically into solid and glandular forms, and a subdivision of the former into three groups according to the predominant type of cancer cell. Of the growths 4.2 per cent were adenocarcinomas, and of the remainder 30.9 per cent were spinal cell cancers, 55.8 per cent were transitional cell cancers, and 13.3 per cent were spindle cell cancers. Only 21 per cent of the growths were pure, and in the remainder the grouping was based on the predominant type of cell present. The best immediate response to treatment was seen in the spindle cell cancers. The results of the author's investigation support to some extent the biologic relation between anaplasia and radiosensitivity. Though the spindle cell cancers showed the better immediate results, the cellular type of the growth seemed to make but little difference so far as the results were concerned. In this respect his observations agree with those of Kimbrough and Norris. This may be accounted for by a balancing of the two factors of the malig-

nant condition and radiosensitivity in the four histologic groups. The results obtained in the group of adenocarcinomas were a little better than they were in the epidermoid cancers. The results in the solid carcinomas improved slightly with the degree of anaplasia of the tumor.

**Hydramnios.** — Rivett presents ten cases, four of which demonstrate that tapping the uterus is a rational method of treating hydramnios, since all four were sufficiently acute to demand intervention, and any other line of treatment would have resulted in a premature and barely viable child. There do not appear to be any risks, other than the patient going into labor. In one case the author apparently struck the placenta, as even when the cannula was pushed in up to the hilt only blood was withdrawn. Several times he has noticed violent fetal movements during the course of the operation, suggesting that the fetus has come up against the sharp end of the cannula. When withdrawing more than two pints of amniotic fluid it is usually necessary to reinsert the needle as, with the lessening of the contents of the uterus, the needle leans at an acute angle to the skin. Even in acute hydramnios, as in one of his cases, the amniotic fluid does not appear to be under pressure. It has to be sucked out with an aspirating syringe.

## Journal of State Medicine, London

**41:** 249-310 (May) 1933

Rheumatism and Arthritis as a Public Health Problem. W. L. Brown. —p. 249.
Social and Industrial Aspects of Rheumatism. R. F. Fox.—p. 263.
Economics of Rheumatism. C. W. Buckley.—p. 282.
Rheumatism as Factor in Employment. J. Boyd.—p. 295.
Quantitative Modification of Bendien Reaction in Serodiagnosis of Malignancy. E. C. Lowe.—p. 301.

## Journal of Tropical Medicine and Hygiene, London

**36:** 141-156 (May 15) 1933

Notes on Bacterial Pseudomycoses. A. Castellani.—p. 141.
Coccidiosis of Hare. A. Robertson.—p. 143.

## Lancet, London

**1:** 943-998 (May 6) 1933

*Pain. D. Waterston.—p. 943.
*Aural Vertigo: Treatment by Division of Eighth Nerve. H. Cairns and W. R. Brain.—p. 946.
Study of Reserves of Vitamin A in Livers of Native Mine Laborers, with Especial Reference to Their Resistance to Pneumonia. F. W. Fox.—p. 953.
Glandular Fever in the Tropics. E. Cochrane and S. C. Bettencourt-Gomes.—p. 955.
Tests for Respiratory Efficiency: So-Called Dead Space. A. Moncrieff. —p. 956.

**Pain.**—Waterston presents the sensory response to a needle prick of the skin, arteries, veins, muscles, fibrous tissues, periosteum and bone. The walls of veins are much less sensitive to mechanical stimulation, and the pain apparatus in them is evidently much slighter than that of arteries. Muscles form an interesting comparison with these other tissues, for while there is no doubt that muscles have a pain apparatus, it is usually excited by a special form of stimulus, i. e., spasmodic contraction as in cramp, or by contraction with impaired blood supply. Pain is usually regarded as a protective mechanism and as being primitive in character, but it is a more highly specialized sense than would at first appear. Under the tactile epithelium of the body surface is a layer of tissue, the corium, furnished with nerves responsive to a wide range of stimuli —in other words, protective against many injurious agencies. The tissues lying deeper still have also a pain apparatus, which, in the case of arteries, responds to mechanical injury but in muscle is responsive rather to harmful conditions originating in the muscle than to mechanical injury. Pain is not a sensation produced by nerves of other forms of sensation but has its own apparatus, its own nerves, and probably its own receptors.

**Aural Vertigo.**—Cairns and Brain report four cases of severe aural vertigo treated by division of the auditory nerve after other methods had failed. In each instance the patient had been getting deaf in one ear for some time before the attacks began. The attacks consisted of vertigo of sudden onset: three of the patients fell without warning, and the fourth had a feeling that he was falling. In addition, external objects appeared to rotate and this symptom was so aggravated by movement that the patients had to keep quite still, usually in the recumbent position. Milder attacks, unaccompanied by falling, occurred in all cases and were often brought on by sudden movement of the head. The severe attacks recurred at varying intervals, and, in addition, the patients sooner or later began to have a constant feeling of unsteadiness and a tendency to deviate to one side when walking. Tinnitus occurred if it had not already been present before the onset of the attacks. Phenobarbital and other sedatives were taken by all with little or no improvement, and one patient had had the middle ear operated on without obtaining relief. Examination revealed no gross physical signs apart from a disturbance of hearing and of labyrinthine function. All patients showed severe deafness of one ear, while the hearing of the other ear was moderately affected or was normal. These patients appeared to be suitable subjects for division of the auditory nerve on the side on which hearing was affected. The operative technic was that introduced by Dandy, with minor variations in all cases. Following the operation, all four patients have been relieved of their vertigo and enabled to return to work. The authors discuss the physiologic results of the operation, which include transitory diplopia.

**1:** 999-1052 (May 13) 1933

Human and Comparative Placentation, Including Early Stages of Human Development. O. Grosser.—p. 999.
Epilepsy and Conditions with Similar Symptoms, with Observations on Hypnotic, Epileptic, Traumatic and Hysterical Dissociation. Hildred Carlill.—p. 1001.
Diverticula of Thoracic Esophagus: Report of Case in Which the Diverticulum Was Successfully Resected. N. R. Barrett.—p. 1009.
Diverticula of Pharynx and Esophagus: Correlation of Pathologic and Radiologic Appearances. R. W. Raven.—p. 1011.
*Elementary Bodies of Varicella and Their Agglutination in Pure Suspension by Serum of Chickenpox Patients. C. R. Amies.—p. 1015.

**Elementary Bodies of Varicella.** — Amies confirms the investigations of Aragão and Paschen and gives a method of preparing purified suspensions of varicella elementary bodies, in which the varicella vesicle fluid is harvested directly into a small volume (0.5 cc.) of physiologic solution of sodium chloride containing 2 per cent of sodium citrate. This is contained in a sealed 1 cc. ampule, which can be opened at the bedside and resealed in a gas flame before returning to the laboratory. A fine capillary pipet fitted with a rubber teat is used to puncture the vesicle and to transfer the fluid to the diluent. If the fluid on aspiration is found to be cloudy from the presence of inflammatory cells it should be discarded, as the elementary body content is low, while the disintegrating cells considerably increase the work of obtaining a pure suspension. The contents of twenty vesicles will yield sufficient pure suspension for five or six agglutination tests. The citrate-saline suspension is first centrifugated at a relatively slow speed (from 1,500 to 2,000 revolutions per minute) for ten minutes in order to throw down any gross débris, cells, and so on. The supernatant fluid is then transferred to tubes of about 5 mm. internal diameter, with a constriction at the top end to enable them to be plugged with absorbent cotton, and is centrifugated at a speed of from 10,000 to 12,000 revolutions per minute for thirty minutes. The supernatant fluid is removed, and the deposit containing the elementary bodies is resuspended in physiologic solution of sodium chloride containing 0.25 per cent of formaldehyde. After a further short period of centrifugation to deposit any débris that may still be present, the suspension is ready for use. The actual test is carried out by mixing equal volumes of the antigen and an appropriate dilution of the serum that is to be examined. The mixture of antigen and serum is mounted as a hanging drop preparation. The preparations are kept at room temperature and are examined under the microscope after twenty-four and forty-eight hours, by means of a two-thirds inch objective and a No. 10 ocular. A positive reaction is recognized by the appearance of small, highly refractile clumps, like those produced in the vaccinia agglutination reaction. Repeated tests have shown that normal serums from man, monkey or rabbit do not agglutinate these suspensions. Antiserum, obtained from animals hyperimmunized against vaccinia and known to contain anti-vaccinial agglutinins to a high titer, has also consistently failed to agglutinate these suspensions of varicella bodies. The author carried out the agglutination test on sixty serums obtained from fifty-five different patients during and after recovery from a typical attack of varicella. The data show that agglutinins appear in the blood about five days after the onset of the erup-

tion and persist for some time. In a few cases the agglutination reaction has failed to detect the presence of circulating antibodies even when a number of tests were made at different times during the convalescent period. This failure to show a reaction is quite in accordance with what is already known regarding the protective power of convalescent serum in virus infections, as in poliomyelitis and measles.

## Medical Journal of Australia, Sydney

**1:** 573-602 (May 13) 1933

Treatment of Joint Lesions of Arthritis Deformans. H. Pern.—p. 573.
Investigation of Toxicity and Sterility of Commercial Preparation Containing Modified Snake Venom. C. H. Kellaway and F. Eleanor Williams.—p. 581.
*Surgical Treatment of Disseminated Sclerosis. N. D. Royle.—p. 586.
Some Anatomic Facts Influencing Obstetric Practice. E. B. Heffernan.—p. 588.

**Disseminated Sclerosis.**—Royle subjected four patients to the division of the thoracic sympathetic trunk between the first and second thoracic ganglions for disseminated sclerosis so that the cerebral circulation would be improved. The results of treatment by altering the cerebral circulation are striking, progressive and lasting. It is nearly eighteen months since the first patient was subjected to operation. It is well known that disseminated sclerosis is characterized by remissions, but it is hardly likely that remissions should immediately follow operation in four consecutive cases without having some relationship to the measures adopted. The direct concomitant of these remissions is an improvement in cerebral circulation, and, in the author's opinion, venous congestion as an antecedent to sclerosis is a factor in causing the symptoms of this disease. It is obvious that the earlier in the course of the disease the patients are subjected to treatment, the more hope there will be for complete recovery. The hyperactivity of the vasomotor center, as a result of cerebral venous congestion, must not be forgotten as a factor leading to bulbar and spinal vasoconstriction and, thus, to altered reflex activity. It is possible that the delay in relaxation and absence of oscillations in the knee jerk are signs of increased tone due indirectly to hyperactivity of the vasomotor center. Because of the contralateral fall in blood pressure and amelioration in the disordered function of abdominal organs following operation on the thoracic sympathetic trunk, it is highly probable that sympatheticotonus will be a term equivalent to activity of the vasomotor center.

## Gynécologie et Obstétrique, Paris

**27:** 481-571 (June) 1933

Pulmonary Ventilation in Pregnant Women. Le Lorier, R. Goiffon and R. Parent.—p. 481.
Anatomy and Pathogenesis of Ovarian Hemorrhages. L. Cornil, M. Mosinger and Picaud.—p. 491.
*Treatment of Puerperal Infection by Vaccination in Situ into Uterine Parenchyma. F. Spirito.—p. 509.
Phases of Physiologic Sterility in Women. E. Macias de Torres.—p. 513.
Anatomopathology of Torsion of Uterine Tubes. J. Regad.—p. 519.
Cysts of Pavilion of Oviduct. G. Jeanneney and S. Magnant.—p. 536.
Vaginal Evisceration of Loop of Small Intestine Fourteen Years After Vaginal Hysterectomy for Prolapse. G. Rieunau.—p. 540.

**Treatment of Puerperal Infection.**—For three years Spirito has treated puerperal infection by local vaccination of the uterine parenchyma without observing a single fatality. The vaccine is composed of 1 billion streptococci, 500 thousand staphylococci, 500 thousand gonococci and 300 thousand colon bacilli per cubic centimeter. The streptococci are obtained by hemoculture from patients who have not yet undergone treatment; the other bacteria composing the mixed vaccine are obtained in large part from the vaginal secretion of the patient being treated. With a fine long needle on a Pravaz syringe, 0.25 cc. of the vaccine is injected into the parenchyma of the uterus. The puerperal uterus being soft, it is not necessary to hold it in place by a clamp or to exteriorize it. The injection is usually followed by an elevation of temperature to 39.5 or 40 C. (103 or 104 F.) proportionate to the degree of the infection and the quantity of vaccine injected. The reaction decreases with each injection and ceases when cure is complete. The dosage for the second and following injections depends on the reaction to the previous injection; it may remain the same or be increased if the first elevation of temperature did not exceed 38 or 38.5 C. (100.4 or 101.3 F.). Injections should be given every three days until the customary dose no longer gives a reaction and one or two should be given thereafter. The injections should be resorted to at the first symptoms, but excellent results have also been obtained in advanced cases. The author thinks that this method of vaccination produces a direct local action on the focus of infection as well as the general immunologic action obtained by other forms of vaccination, and that this is probably responsible for the excellent results.

## Presse Médicale, Paris

**41:** 1137-1160 (July 19) 1933

Effects of Resection of Superior Cervical Sympathetic Ganglion on Parathyroids in Dogs. R. Leriche, A. Jung and E. Woringer.—p. 1137.
Tonsillectomy by Taptas' Method. G. Departout.—p. 1139.
*Amino-Acids in Treatment of Hay Fever. J. Lenormand.—p. 1141.

**Amino-Acids in Treatment of Hay Fever.**—Lenormand treated twenty-nine hay fever patients with a solution of 2 per cent tryptophan and 4 per cent histidine, administered in daily subcutaneous injections of from 0.2 to 0.4 cc. The injections were made during the pollen season. In fourteen patients the symptoms disappeared completely within a brief time, in eight they were greatly attenuated and in five they were diminished sufficiently to be readily endurable. While the daily injections were given, some of the patients were able to be in the places most favorable to the production of their hay fever without a recurrence of symptoms. This treatment, however, is merely palliative and its effects are felt only during the period of treatment. The action of the amino-acids in the treatment of hay fever as in the treatment of gastric and duodenal pain probably consists in stimulating a hypersecretion of mucus, which protects the hypersensitive mucous membrane concerned (nasal or gastro-intestinal) against irritating substances.

## Riforma Medica, Naples

**49:** 589-624 (April 22) 1933

Origin and Significance of Bilirubin in Cerebrospinal Fluid. S. Maugeri.—p. 591.
*New Prophylactic Method Against Intolerance to Arsphenamines. U. Rebaudi.—p. 593.
Multiple Angiomas of Bladder and Kidney. G. Cirio.—p. 598.
Modern Treatment of Acute Anterior Poliomyelitis. M. Raspi.—p. 615.

**Prophylaxis Against Intolerance to Arsphenamines.**—Rebaudi tried on men and rabbits intravenous injections of a non-aqueous solution of 0.9 Gm. of neoarsphenamine in from 1 to 2 cc. of amino-acid of the liver, stirred with a glass rod until the color was yellow gold. He administered slowly 0.15 Gm. of the solution per kilogram of body weight to rabbits and minimum doses of from 0.3 to 0.45 Gm. of the solution to men on alternating days until reaching 0.9 Gm. and in some cases a maximum of 1.2 Gm. In all cases the injection proved innocuous. He demonstrated that patients presenting incoercible symptoms of intolerance to arsphenamine responded favorably to this prophylactic method. The author experimented with the amino-acids of the brain and spinal cord, which showed similar action but had a less detoxicating effect than the amino-acids of the liver. He recommends this method to permit the administration of stronger and more frequent doses of neoarsphenamine.

**49:** 895-934 (June 17) 1933

Pathogenic Activity of Enterococcus: Enterococcic Pneumonitis. L. d'Antona.—p. 897.
*Less Common Forms of Acute Anterior Poliomyelitis. A. Gentili.—p. 900.
Mechanism of Visceral Abdominal Pain Studied in Operative Acute Appendicitis, Especially in Ectopic Seat. A. Ciminata.—p. 904.
Alcohol Treatment of Pulmonary Suppurations. F. Serio.—p. 925.

**Acute Anterior Poliomyelitis.**—Gentili, within a period of fourteen months, observed six cases of paralysis of the facial nerve and one case of paralysis of the sixth cranial nerve. In all cases the paralytic manifestations were preceded either by a febrile period of from three to four days or by indications of a slight involvement of the spinal cord. Many cases of paralysis of the facial nerve are produced by the action of a neurotropic virus, probably the poliomyelitis virus, affecting the protuberantial nucleus of the facial nerve. According to Wickman, Schreiber and others, many cases described as acute meningitis with paralysis are really acute anterior poliomyelitis with meningitic beginning. The author describes a case of acute anterior poliomyelitis with a symptomatology so purely meningitic that it had been diagnosed at first as tuberculous meningitis. Only later did the patient evince slightly paretic signs in the

lower limbs, preceded by sharp pains. These were probably due to a participation of the pathologic process of the posterior spinal roots with lesions of the cells of the anterior gray horn. Consequently it was called a meningocelluloradiculitis. Etiologically this case was attributed to a poliomyelitic infection because of its clinical characteristics and its course, and because, at the same time, typical cases of acute anterior poliomyelitis were found in the immediate neighborhood.

## Semana Médica, Buenos Aires

**40:** 2089-2160 (June 29) 1933. Partial Index

Synchronized Technic in Surgery of Appendicular Abscess and of Appendicular Localized Peritonitis. G. Bosch Arana.—p. 2089.
Rupture of Chorion During Pregnancy: Intra-Amniotic, Extrachorial Pregnancy: Two Cases. E. A. Boero, V. López Zavaleta and J. L. Costa.—p. 2108.
Gastrotonometric Curve of Normal Stomach. T. Martini and R. E. Curutchet.—p. 2111.
Roentgen Examination of Digestive Tract. E. A. Lombardi and L. L. Bernardo.—p. 2116.
Velez's Sign of Inversion of Leukocytes in Pulmonary Tuberculosis. C. Floriani.—p. 2119.
Extragenital Syphilitic Chancre Without Venereal Contact: Case. C. Orol Arias and M. A. Mazzini.—p. 2124.
*Primary Echinococcosis of the Vertebrae: Two Cases. J. E. Pessano. —p. 2126.

**Primary Echinococcosis of Spine.**—Pessano states that trauma seems to be concerned in the etiology of primary vertebral echinococcosis. The disease develops after a long period of latency, which makes its early diagnosis difficult. The earlier the diagnosis is made, the greater the probabilities of obtaining a cure through surgery, which is the only recourse. Arsenical compounds are found to have a favorable influence as coadjuvants of the surgical treatment. It is advisable to aim at total evacuation of the cysts, but, if this cannot be done, as much of the hydatid material as possible should be removed. The operation brings about a prolonged improvement in the condition of the patient and prevents the development of secondary echinococcosis. Primary osseous echinococcus cysts are always multilocular and are located in either the spongy or the areolar tissues of the vertebrae. The cysts cause compression of the spinal cord and the outcome is usually fatal. Two cases are reported.

## Siglo Médico, Madrid

**92:** 1-24 (July 1) 1933. Partial Index

*Medical Treatment of Tuberculosis of the Genital Organs in Women. L. Soler y Soto.—p. 1.
Modern Concepts on Etiology of Gangrene of the Lung: Three Cases. F. Peco.—p. 8.

**Tuberculosis of Genital Organs.**—Soler y Soto states that the medical treatment is not mutilating and gives satisfactory results when resorted to during the early periods of the disease. In all cases it should be associated with a general hygienic and dietetic treatment. The roentgen treatment, because of its property of destroying the pathologic tissues without injuring normal cells, is of great therapeutic value. The objections to this treatment are the production of amenorrhea and the possibility of abnormalities in the offspring of irradiated women. Amenorrhea in these cases constitutes a means of defense of the organism against the infection. With regard to the second objection, pregnancy in these women is a rare event and the fear does not seem justified in view of the fact that Walter Schemit reported 163 pregnancies after roentgen treatments with normal children and that the author knows of a similar case. Heliotherapy, ultraviolet irradiations and diathermy, either by themselves or as coadjuvant to some other forms of medical treatment, also give satisfactory results. Finikoff reports satisfactory results from a combined treatment with calcium and iodine. It consists in intramuscular injections of from 5 to 15 cc. of an oil prepared with 1 cc. of a 10 per cent solution of iodine added to 10 cc. of sterilized neutral peanut oil. The injections are given at intervals of five or eight days and are associated with calcium therapy. Finikoff prefers inorganic calcium salts and gives them orally and, exceptionally, intravenously. The diet is the one given to patients with acid cholitis. The treatment has been used in all forms of tuberculous diseases except in intestinal, laryngeal and pulmonary tuberculosis, and, in 245 cases of tuberculosis of the female genital organs, has resulted in 181 clinical recoveries, 46 improvements and 19 failures.

## Archiv für Verdauungs-Krankheiten, Berlin

**54:** 1-128 (July) 1933

Point of Attack of Histamine and of Secretin-Like Acting Substances in Certain Foods on Secretory Apparatus of Glands of Fundus of Stomach. A. Bickel and I. Kanai.—p. 1.
*Should Histamine Test Be Employed in Diagnosis of Anacidities? G. Szemzö.—p. 16.
Unusual Aspects of Diabetes in Jews. H. Strauss.—p. 34.
Thiocyanic Acid in Gastric Juice. H. R. Kanitz.—p. 42.
Limits of Agreeableness of Some Foods in Adults Without Gastro-Intestinal Disturbances. H. Winkler.—p. 52.
Pathogenesis of Acute Necrosis of Pancreas. E. Neter.—p. 62.
Connection Between Cholelithiasis and Cancer of Gallbladder. J. Seide and W. Geller.—p. 71.
Influence of Gastric Secretion on Speed of Blood Current, Utilization of Oxygen, and Sugar and Chloride Content in Arterial and Venous Blood. D. F. Okunew and M. S. Ssolnzewa-Rjasanowa.—p. 78.

**Histamine Test in Diagnosis of Anacidities.**—Szemzö reports a case in which, following a diagnostic histamine injection, a severe collapse developed. He states that the outcome of the histamine test has no significance for the differential diagnosis of disturbances that are accompanied or caused by anacidity. The histamine test gives no information about the type, the severity and the restitutional capacity of the changes in the gastric mucous membrane and it gives no directions for the treatment. The stimulating action of histamine on the secretory function can be replaced by insulin and perhaps also by other substances that act on the stomach directly rather than by way of the blood stream. The author suggests the patient's favorite food and various test breakfasts. He thinks that the latter methods will be preferable for the examination of the gastric function, particularly if the test is made by the practitioner outside the hospital. He points out that his report is not intended to dispute the therapeutic use of histamine but only its diagnostic use.

## Beiträge zur klinischen Chirurgie, Berlin

**158:** 1-112 (July 12) 1933

*Experimental Studies on High Intestinal Obstruction: Question of Absorption. P. Seulberger, K. Brandes and W. Roth.—p. 1.
Healing in Osteochondritis Dissecans in Experimental and Clinical Investigations. H. Tammann.—p. 39.
Multiple Tumors of Cartilagenous Tissue of Skeleton with Local Sarcomatous Transformation. T. Canigiani.—p. 49.
*Mediastinal Emphysema. W. Dick.—p. 59.
Calcification of Cartilagenous Disks of Knee Joint. R. Andreesen.—p. 75.
Rôle of Surgery in Training of Physician. K. H. Bauer.—p. 83.

**High Intestinal Obstruction.**—Seulberger and his associates conclude from their experimental studies that absorption of both organic and inorganic substances takes place in an occluded intestine. The practical suggestion to be derived is the desirability of emptying the occluded loops. The results obtained with an ileostomy tend to support the theoretical premises. The injunction of Läwen not to empty the occluded contents by way of the normal intestine below was based on a supposition that there was an increased rate of absorption in the normal intestine below the occlusion and that this rapid absorption was the cause of sinking of the blood pressure. The authors state that their experiments clearly demonstrate that there is no increase in the rate of absorption from the intestine below the obstruction and that the fall of blood pressure is the result of irritation of the vagus. The authors, in agreement with other investigators, find that the rate of absorption in ileus is slower than in the normal state. They claim they are the first to prove that the vital activity of the wall of the intestine is impaired in ileus. They have reference particularly to the pumping or sucking action of the intestinal villi. They have demonstrated that this function becomes arrested as a result of the mildest disturbance in the blood supply to the intestine and that a definite, mildly alkaline reaction is necessary to maintain the function. They have further demonstrated that the contents of an occluded intestine are hypertonic and of a greater alkalinity than the normal contents. The longer the duration of the obstruction, the less does the wall of the intestine remain as a living membrane with a regulated permeability. The authors point out that there are factors other than the wall of the intestine which impede absorption. They studied liver function in ileus and found that elimination by it of inorganic poisons is slower when there is obstruction of the intestine and that the detoxifying effect on strychnine and tribrom-ethanol is much affected.

**Mediastinal Emphysema.**—Dick reports two instances of mediastinal emphysema treated in Schloffer's clinic. He states that, while the diagnosis may at times be obscure, sudden development of subcutaneous emphysema over the throat, spreading over the neck and the chest, is pathognomonic. The pathogenesis was elucidated by Jehn and Nissen in their experimental studies. According to them, the condition is the result of the compression of the extrapericardial portions of the pulmonary tissue and of the venae cavae, and not of the trachea. Nägeli, utilizing an opaque medium, demonstrated roentgenoscopically the arrest of the blood stream in the venae cavae. From the standpoint of treatment there are two indications: (1) to relieve the pressure on the venae cavae, (2) to close the opening in the bronchus or the pulmonary tissue. The first is of life-saving importance, the second is only relative. The measures that have for their primary aim the relief of pressure are: (1) punctures of the throat or the mediastinum; (2) incisions with (*a*) division of the skin and the platysma, (*b*) opening up of the middle fascial compartment of the neck, (*c*) opening into the mediastinum; (3) wide opening of the mediastinum through division of the sternum or through a parasternal mediastinotomy. The author prefers jugular incisions as less shocking and quite as efficient. The incision of the middle cervical fascia opens up the middle compartment of the neck, which is in direct communication with the mediastinum. A still more efficient method of releasing the air is to open the mediastinum through the same incision.

## Dermatologische Wochenschrift, Leipzig

**97:** 1055-1098 (July 15) 1933

Schizosaccharomyces Hominis Benedek. O. Backofen.—p. 1055.
Tubercle Bacillemia in Cutaneous Tuberculosis. L. Bernhardt.—p. 1056.
*Identity of Adenoma Sebaceum, Neurofibromatosis and Subungual Fibromatosis. I. Enokow.—p. 1061.
Use of Filiform Douche in Dermatology and Advantages of New Apparatus. M. Monacelli.—p. 1064.
Criticism of Dermatologic Therapy: Acne Vulgaris and Roentgen Irradiation. M. K. Polano.—p. 1070.
Ultraviolet Therapy of Leukorrhea. O. Berger.—p. 1072.

**Adenoma Sebaceum, Neurofibromatosis and Subungual Fibromatosis.**—On the basis of an analysis of reports in the literature and of observations on a woman in whom adenoma sebaceum, neurofibromatosis and subungual fibromatosis concurred, Enokow reaches the following conclusions: 1. Adenoma sebaceum is one of the manifestations of neurofibromatosis. This is proved by the frequent concurrence of these two dermatoses, by their common origin and by the similarity in their clinical and histologic aspects. 2. Subungual fibromatosis supplements the generalized disturbances of neurofibromatosis and of adenoma sebaceum: it has the same pathogenesis and consequently should not be considered as a separate nosologic entity.

## Deutsche medizinische Wochenschrift, Leipzig

**59:** 989-1028 (June 30) 1933

Circulation and Nervous System. F. Kauffmann.—p. 989.
Syringomyelia. F. Schultze.—p. 992.
*Danger of Intra-Uterine Foreign Bodies. G. Glaser.—p. 994.
Indications for Anesthesia by Means of a Sodium Salt of a Barbituric Acid Derivative. E. Kobel.—p. 996.
Mud Packs in Treatment of Rheumatic Disturbances. Genner and Hasenbach.—p. 999.
Blood Picture and Oxygen Deficiency. E. Jokl.—p. 1001.
What Knowledge Should Practitioner Have About Diagnosis and Treatment of Mental Disturbances? Nobbe.—p. 1004.

**Danger of Intra-Uterine Foreign Bodies.**—Glaser calls attention to the complications that may be produced by the intra-uterine use of pessaries, laminaria tents, bougies, ballons and abortifacient ointments. He reports the histories of three women in whom the introduction of an intra-uterine pessary to prevent pregnancy led to extensive parametric infiltrations and exudates, to tumors of the adnexa or to severe peritonitis. In the case of intra-uterine injection of abortifacient ointments the dangers are still greater, for chemical action is added to the mechanical damage and to the danger of infection. The author observed three cases in which the use of such ointments led to severe complications with a fatal outcome in one. He emphasizes that intra-uterine pessaries and abortifacient ointments are quack methods and should disappear from the therapeutic armamentarium of the physician.

## Klinische Wochenschrift, Berlin

**12:** 1009-1040 (June 30) 1933

Local Diagnosis of Mental Disturbances. E. Küppers.—p. 1009.
Test of Potency of Digitalis Preparations on Human Beings. E. Edens.—p. 1012.
*Intestinal Wall as Site of Formation of Choline and Its Significance for Peristalsis. G. Kahlson.—p. 1015.
*Circulatory Action of Epinephrine in Healthy Human Beings. H. Schulten, G. Budelmann and H. Lippelt.—p. 1017.
Chronaximetric Investigations in Tetany. H. Reiners.—p. 1018.
Calcium Content of Guinea-Pigs After Administration of Small Quantities of Parathyroid Hormone. B. N. E. Cohn and R. Stöhr.—p. 1021.
Applicability of Acetylene Method for Determination of Heart Minute Volume in Pregnancy. A. Anthony and R. Hansen.—p. 1022.
High Incidence of E. Dysentery (Kruse-Sonne Dysentery) in Schleswig-Holstein During 1932. F. Weigmann.—p. 1024.
Quantitative Determination of Indican in Blood Serum. J. Broekmeyer.—p. 1025.

**Intestinal Wall as Site of Formation of Choline.**—Kahlson shows that the intestinal wall is capable of separating from lecithin large amounts of choline. The entire small intestine has the capacity of forming in about twelve hours the amount of choline present in the entire body. The uterus is likewise capable of producing considerable amounts of choline, whereas the skeletal muscles produce larger amounts only after considerable tetanization. About the production of the paristaltic wave, it is assumed that a certain amount of choline is a physiologic necessity for the response of the intestine to filling and to dilatation. The dilatation stimulus is the immediate factor that elicits peristalsis, but this stimulus can be furthered by superposed chemical "auxiliary stimuli." Acetylcholine fulfils all pharmacologic requirements to serve as such an auxiliary stimulus.

**Circulatory Action of Epinephrine.**—Schulten and his associates observed that in healthy persons the injection of epinephrine produces, in addition to the well known increase in arterial pressure, pulse frequency and venous pressure, a temporary reduction in the vital capacity of the lung. It is assumed that this indicates a temporary oversupply of blood in the lung, resulting from the disproportion of the functional activity of the right and left heart.

## Medizinische Klinik, Berlin

**29:** 933-964 (July 7) 1933

Apoplectic Cerebral Hemorrhages. L. Aschoff.—p. 933.
Chemical Investigations and New Theories About Immunity. F. Haurowitz.—p. 936.
Epidemiologic, Clinical and Histopathologic Experiences During Poliomyelitis Epidemic in Silesia in 1932. L. Guttmann.—p. 939.
*Modification of Gastric Secretion by Combination of Hydrochloric Acid and Glutamic Acid Therapy. P. Mahler.—p. 943.
*Symptomatology of Impairment of Posterior Roots ("Head Bending Symptom"). F. T. Münzer.—p. 945.
Therapy of Ozena. C. Veits.—p. 948.
Spirochetes of Multiple Sclerosis. P. Kuhn.—p. 950.

**Gastric Secretion, Hydrochloric Acid and Glutamic Acid.**—According to Mahler, the secretory action of glutamic acid has long been known, for it has been employed in the food industry for the preparation of flavoring extracts. His object was to study the influence of a compound of hydrochloric acid and glutamic acid on the function of the stomach and to determine whether the combination of the two acids is more effective than hydrochloric acid alone. He describes the various tests he made and gives tabular reports of their results, which indicate that in most cases the simultaneous action of hydrochloric acid and of glutamic acid exerts a greater influence on the gastric secretion (quantity of secretion, hydrochloric acid, chlorides) than does that of hydrochloric acid alone. The effect persists longer and the author never observed injurious effects from the large quantities of acids that were administered.

**Symptoms of Impairment of Posterior Roots.**—Münzer describes the case of a man in whom, after a diffuse trauma, active movement of the head was followed by paresthesias in the upper extremities. Examination revealed only a percussion sensitivity of the lower cervical vertebrae. In a woman with typical radicular sciatica, movement of the head against the chest caused a considerable exacerbation of the pains in the sciatic region. After the author's attention had been called to the phenomenon by these two cases, he observed it in a number of other patients. Since the pains or paresthesias as a rule develop only when the head is bent, and only in exceptional cases when the head is moved sideward, the author considers

the designation "head bending symptom" the most suitable. The manner in which the paresthesias develop indicates that they are caused by traction on the diseased roots. The passive movement of the head usually produces a more severe pain than does the active bending. The symptom is present in inflammatory, traumatic and various neurologic disturbances, and from this the author concludes that it is a local symptom rather than a type symptom. He stresses this to contradict Sterling, who described a "cervical root symptom" as characteristic of a syphilitic radicular neuritis. The head bending symptom is positive in conditions in which the roots are actually involved as, for instance, in infectious myeloradiculitis, but there are also processes in which it is a distant symptom; to the latter belong disorders in which the cerebral pressure is increased and in which the pressure is also exerted on the spinal roots.

## Monatsschrift f. Geburtshülfe u. Gynäkologie, Berlin

**94:** 321-396 (July) 1933

*Uterus Duplex with Simultaneous Pregnancy in the Two Halves. P. von Salacz.—p. 321.
*Decidual Reaction of Tube in Intra-Uterine and Tubal Pregnancy and Its Significance for Etiology of the Latter. A. J. Osiakina and K. D. Schmatok.—p. 329.
Causes of Mortality of the New-Born. S. Liebmann.—p. 338.
Casuistics and Problems of Injuries of Female Genitalia Caused by Pointed Instruments. E. Mosettig.—p. 357.
Can Cancer of Glands of Cervix Uteri Be Considered as Refractory to Ray Therapy? W. Haupt.—p. 364.

**Twin Pregnancy in Double Uterus.**—Von Salacz points out that in women with double uterus, if one half becomes pregnant, the empty half may be an obstacle during delivery, or it may be the cause of erroneous diagnosis in that it may give the impression of a myoma, of an ovarian cyst or even of an extra-uterine fetal sac. Positional anomalies of the fetus are likely in double uterus, and the deficient development of the musculature may lead to abortion, premature birth, perforation or weakness of the uterine contractions. A simultaneous pregnancy of the two halves of a double uterus is comparatively rare and the diagnosis may present difficulties. It has been pointed out that women with a double uterus frequently have an unusually large pelvis. The case of double uterus with simultaneous pregnancy in the two halves, reported by the author, is noteworthy because the pregnancy was brought to term, which is rare in double uterus, and, with the exception of an early detachment of the placenta, the anomaly caused no disturbances. The premature detachment of the placenta was probably due to mechanical factors. Both fetuses were delivered dead, but the puerperium was without complications. The author thinks that if the two halves of a double uterus are normally developed therapeutic interventions are unnecessary. However, if during gravidity severe functional disturbances develop (habitual abortion or habitual premature birth), or if a former delivery was difficult and dangerous on account of the anomaly, an operative unification of the two halves may be considered. This intervention has been done in some cases, and several authors report normal births following it. However, there is great danger of the surgical scar tearing during pregnancy or delivery or of disturbances in the uterine contractions, because the two halves of the uterus may contract independently. The author thinks that the operation is unnecessary in most cases, but constant supervision is advisable during pregnancy and, because the delivery may lead to complications, it should be done in an institution.

**Decidual Reaction of Tube in Tubal Pregnancy.**—In order to determine whether the decidual reaction of the uterine tubes is an etiologic factor in tubal pregnancy, Osiakina and Schmatok made microscopic studies on tubes from 100 women with tubal pregnancy and from 35 women with intra-uterine pregnancy. The tubes were obtained in the course of interventions for sterilization. The authors reach the following conclusions: 1. In intra-uterine pregnancy the tubal mucous membrane as a rule shows no decidual reaction. 2. In tubal pregnancy the decidual reaction of the tubes develops frequently as a defense reaction against the ingrowth of the chorionic villi at the site of nidation of the ovum; in these cases it is of course impossible to ascribe an etiologic significance to the decidual reaction. 3. In twenty-one cases of tubal gravidity the decidual reaction of the tubes developed independent from the localization of the ovum. 4. In eight of these cases the tubal reaction was the cause of tubal pregnancy. 5. The decidual reaction can develop only in tubes with a deficiently differentiated mucous membrane and in the presence of cytogenic stroma, or if the mucous membrane is of the same structure as the uterine mucosa. 6. A deficient differentiation of the tubal mucous membrane is most likely favored by poor living conditions during the prepuberal period.

## Münchener medizinische Wochenschrift, Munich

**80:** 995-1034 (June 30) 1933

Criticism on and Suggestions for Treatment of Gallstone Disease. P. Morawitz.—p. 995.
Scoliosis. F. Schede.—p. 998.
*Diagnosis and Autovaccine Therapy of Actinomycosis. E. Payr.—p. 1001.
Modern Nutrition. W. Kruse.—p. 1003.
Buccal Leukoplakia. J. Rille.—p. 1005.
Psychopaths and Abnormal Characters. P. Schröder.—p. 1007.
*Atypical Syndromes in Hypophyseal Tumors. A. Bingel.—p. 1009.
Clinical Aspects of Arachnoidal Hemorrhages. F. Krause and B. Fuchs.—p. 1011.
Is Read's Formula Suitable for Determination of Basal Metabolism in Practice? Hartleben.—p. 1013.
Treatment of Agranulocytosis by Means of Pentnucleotide. H. Brugsch and J. Lautsch.—p. 1014.
Hemoglobin Determination. H. Schulten.—p. 1017.

**Diagnosis and Autovaccine Therapy of Actinomycosis.**—Payr states that the diagnosis of actinomycosis frequently requires repeated histologic examinations and exploratory excisions. It is advisable always to make a large number of cultures (from sixty to eighty) and, since Actinomyces is potentially anaerobic, not to neglect the anaerobic culture methods. The author's nonsurgical therapy combines oral iodine treatment, repeated roentgen irradiations and subcutaneous injections of autovaccine. He considers scraping inadvisable and thinks that it promotes the development of new abscesses. He obtained good results with the application of compound solution of iodine, iodoform glycerin and other preparations. The roentgen treatments are given in doses of 165 roentgens three times each week. The treatments are repeated after an interval of six weeks. The injections of the autovaccines have to be continued for long periods, even after the foci have apparently disappeared. The author has given from twenty to sixty injections over periods of six months or longer and has found that this prolonged vaccine therapy prevents relapses. He asserts that his procedure does away with disfiguring interventions in actinomycosis of the face, jaws, neck and parotid gland. However, primary foci of actinomycosis of the teeth and tonsils should be removed. In actinomycosis of the lungs, the pleura and the mediastinum, in which most treatments fail, the autovaccine therapy gives some prospect of success.

**Atypical Syndromes of Hypophyseal Tumors.**—Bingel gives the histories of five patients with tumors of the hypophysis in whom hypophyseal symptoms were either entirely absent or so slight that they were overlooked. Only in one patient was a hypophyseal disturbance thought of and a correct diagnosis was made in this patient and in one other, in whom a ventriculography was done on the assumption that a cerebral tumor might be present. In three patients the hypophyseal tumor was not found until a postmortem examination was made. To avoid such failures in diagnosis, the author advises that, just as every neurologic case is subjected to examination of the fundus oculi, it should likewise be the rule to make a roentgenogram of the cranium whenever a case is doubtful. This is the more justified since air filling is not necessary.

## Zentralblatt für Chirurgie, Leipzig

**60:** 1697-1760 (July 22) 1933

*Contribution to Treatment of Arterial Embolism. H. Kohlmayer.—p. 1698.
Implantation of Testis on Kidney of Mouse. A. Lipschültz.—p. 1705.
Treatment of Central Dislocation of Hip by Traction on Great Trochanter. O. Winterstein.—p. 1710.
Pressure Syringe for Local Anesthesia. F. Hollenbach.—p. 1713.
Meckel's Diverticulum. H. Bock.—p. 1715.
Splinting of Fractures of Long Tubular Bones. Müller-Meernach.—p. 1718.
Prevention of Postoperative Effusion into Knee Joint by Forming Window in Capsule. F. Mandl.—p. 1723.

**Treatment of Arterial Embolism.**—Kohlmayer is concerned with the mechanical effect of an embolus on the blood vessel and with therapeutic possibilities arising therefrom, par-

ticularly in embolism of the upper extremities. The arteries of the lower extremities are the most frequent seat of embolic phenomena, as shown in the statistics of Bull, Petitepierre and Wolff and Heidrich. Petitepierre states that embolism of the main artery of an extremity leads to gangrene in most instances. The ability of the involved vessel to react to stimuli is a factor of importance. That arteries undergo a spasmodic contraction when stimulated has been established by Cohnheim in animal experiments. Petitepierre observed at the end of an embolectomy in a man a spasmodic contraction of the artery for a distance of 10 cm. This author believes that the arterial spasm following on the lodging of an embolus in an artery persists for twenty-four hours or longer and is followed by vasodilatation. In some instances this dilatation may be sufficient to allow the blood to get by the obstruction. The rationale of the internal administration of antispasmodic drugs, such as atropine, in cases in which operation may be contraindicated, suggests itself. The author reports two cases in which papaverine was administered intravenously in doses of 0.03 Gm. with remarkable results. The effects of the injection could be followed by microcapillaroscopic observations with the exactitude of an experiment. Fifteen minutes after the injection, the number of visible capillaries increased, the stasis in the veins was changed to a flow, and the white background changed to yellow or orange. Simultaneously the objective signs of arterial occlusion receded. Both instances were in the upper extremities. In one patient, a woman of 39, a complete disappearance of all signs of circulatory disturbance took place. In the second patient, a man of 60, while capillaroscopic observations demonstrated the effect of the drug, death supervened because of multiple embolic phenomena involving the brain and the internal carotid artery. The author concludes that good results from this treatment can be expected only when the embolus is small and the involved artery is not atheromatous, and therefore capable of reacting to a stimulus. Because embolisms of the arteries of the lower extremities are usually massive, it is questionable whether this treatment would prove effective. The treatment is in no way offered as a substitute for the accepted surgical treatment but rather as an aid or a substitute in instances in which the operation cannot be carried out.

## Zentralblatt für Gynäkologie, Leipzig

**57:** 1505-1568 (June 30) 1933

*Roentgenologic Diagnosis of Malformations of Fetus. G. K. F. Schultze. —p. 1508.
Roentgenologic Measurement of Pelvis According to Guthmann. F. Friedl.—p. 1512.
Misuse and Failures of Hypophyseal Extracts in Obstetrics. H. Fuchs. —p. 1519.
Anesthesia by Means of Sodium Salt of a Barbituric Acid Derivative: Dosage. O. Köster.—p. 1524.
Suppurative Meningitis Following Meningeal Hemorrhage in New-Born Infant. E. Neter.—p. 1528.
*Dangers of Induced Abortion. W. Spitzer.—p. 1530.
Congenital Atresia of Esophagus with Multiple Tracheo-Esophageal Fistulas. B. Szendi.—p. 1534.

**Roentgenologic Diagnosis of Malformations of Fetus.**—Schultze points out that the possibility of roentgenologic visualization of fetal deformities was demonstrated as far back as 1914. He discusses particularly the malformations of the head. In the women's clinic of the university of Berlin a number of cases of anencephalus have been detected by roentgenoscopy. However, of much greater importance than the early recognition of an anencephalus, which usually does not cause obstetric complications, is the early diagnosis of hydrocephalus, because the delivery of the large head may lead to difficulties. There are cases of hydrocephalus in which a definite diagnosis is not possible without roentgenoscopy in various planes. The author emphasizes that the estimation of the size of the head alone is not sufficient for the diagnosis of hydrocephalus. In a twin pregnancy he observed that one head appeared much larger than the other, but when the heads were measured after delivery they were found to be of the same size. He advises observation of the size of the head, of the fontanels, of the skeleton of the face, which in hydrocephalus appears unusually small and compressed, and of the proportion of the trunk to the head.

**Dangers of Induced Abortion.**—Spitzer says that in Germany it is estimated that 25,000 deaths a year are caused by induced abortions. He thinks that this estimate is too low rather than too high. The fatalities occur primarily in abortions performed in private homes, and for this reason the author welcomes the law stipulating that in Czechoslovakia abortions induced for certain indications are to be done only in hospitals. He reports 162 abortions induced in the university women's clinic in the course of the last five years. He shows the causes that made interruption necessary, the ages of the women, the months of pregnancy during which abortion was induced, the methods employed and the morbidity. There were no deaths, but he discusses the dangers that were encountered, the greatest of which was infection. Injuries, hemorrhages and complications from the adnexa were comparatively rare. The single instrumental interruption involved the least danger of infection, and it was done in nearly 50 per cent of the cases; that is, in all cases in which the pregnancy had not advanced beyond the third month. However, three cervical tears resulting from the use of Hegar's dilator show that this method also has its shortcomings. Because of its greater danger of infection, the laminaria method was employed only when a moderate method was necessary or when the use of Hegar's dilator was unsuccessful on account of a rigid cervix. In the more advanced stages, vaginal section was found to be the most reliable method. Metreurysis was done only in rare cases, for a morbidity rate of 25 per cent shows that this method is fraught with too much danger. The methods employed in the material studied by the author gave, on the whole, good results, and he does not feel justified in abandoning them in favor of the recently proposed intra-uterine injection of abortifacient ointments, especially since the latter have caused a number of fatalities.

## Acta Chirurgica Scandinavica, Stockholm

**70:** 481-590 (July 14) 1933

Contribution to Conception of Osteogenesis Imperfecta Congenita and Osteopsathyrosis Idiopathica as Identical Disorders. K. Bierring. —p. 481.
*Frequency, Nature and Pathologic Significance of Malformations of Kidneys and of Urinary Tract. F. Roscher.—p. 493.
Spontaneous Rupture of Quadriceps Femoris Muscle in Old Tabetic Patient Cured by Operation. S. I. Riswasch.—p. 541.
Solitary Nonparasitic Liver Cysts. I. Sandberg.—p. 555.
Congenital Renal Ectopia. F. Settergren.—p. 563.

**Malformations of Urinary Tract.**—Roscher presents a study of malformations of the urinary tract based on postmortem material of the anatomopathologic institute of the Norwegian University Clinic at Oslo for the period 1914 to 1930. The author divides the material into two groups. Group 1 comprised 1,532 sections on new-born children with forty instances of malformation of the kidneys and the urinary tract, a percentage of 2.6. Group 2 consisted of sections on 3,995 older children and adults with an incidence of malformation of the kidney and the urinary tract in 104, a percentage of 2.6. The author draws attention to the occurrence in Group 1 of hydronephrosis in combination with anomalies of the ureter. In addition to instances in which strictures, valvular formations and dilatation of the ureter seemed responsible for the hydronephrosis, he has likewise observed this association without strictures. He concludes, therefore, that hydronephrosis and ureteral dilatation may be regarded as a malformation. Of the eleven instances of cystic kidneys, nine presented malformations elsewhere in the urinary tract, thus suggesting that the condition, at least in its origin, is likewise a malformation. In group 2 there was an incidence of 0.75 per cent of aplasia or of hypoplasia of one kidney. In most instances, renal aplasia was associated with aplasia of the ureter. About 50 per cent of hypoplasias were associated with hydronephrosis. Hydronephrosis was unilateral in fourteen and bilateral in fourteen. It was usually associated with malformations of the ureters such as dilatations or valvular formations without, however, producing a true obstruction. Among the twenty-eight instances of hydronephrosis there were nineteen of pyelonephritis and one of pyelitis. Only two patients had calculi. Of the eleven instances of cystic kidney, two were characterized by familial origin belonging to a "family of cystic kidneys." Ectopy of the bladder was seen four times and in three it was associated with other malformations of the urinary tract. The instances of deformed, dystopic and horseshoe kidneys were always accidental observations and without any pathologic significance.